

Report

Baldwin Park Operable Unit
Pre-Remedial Design
Groundwater Monitoring Program

Draft Pre-Remedial Design Report
Appendices C, D and E

December 1996

Appendix C

Appendix C
Field Parameter Data Sheets

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
EPA MW5-01

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (μmhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
EPA MW5-01 (Zone 1)	1495-1505	03/11/96	381	7.49	3.58	19.2
		06/19/96	390	7.12	10.70	27.1
		09/18/96	380	8.27	4.15	21.5
EPA MW5-01 (Zone 2)	1387-1397	03/11/96	398	7.76	10.20	19.1
		06/19/96	410	7.33	8.50	28.3
		09/18/96	410	8.29	3.62	21.5
EPA MW5-01 (Zone 3)	1256-1266	03/12/96	410	8.45	3.42	17.1
		06/19/96	430	7.78	3.30	28.1
		09/18/96	399	8.32	2.39	21.5
EPA MW5-01 (Zone 4)	1123-1133	03/12/96	300	8.29	1.97	17.5
		06/19/96	350	7.65	2.34	27.5
		09/18/96	340	8.88	1.99	21.0
EPA MW5-01 (Zone 5)	1030-1040	03/12/96	322	8.61	2.11	16.7
		06/20/96	390	8.11	2.50	26.5
		09/18/96	365	8.39	2.43	23.0
EPA MW5-01 (Zone 6)	875-885	03/12/96	319	8.59	2.13	15.7
		06/20/96	410	7.77	3.15	26.9
		09/18/96	412	7.94	2.49	22.5
EPA MW5-01 (Zone 7)	765-775	03/13/96	342	8.60	0.78	17.0
		06/20/96	400	7.53	4.43	27.0
		09/18/96	375	8.49	3.32	22.5
EPA MW5-01 (Zone 8)	640-650	03/13/96	460	8.17	0.88	17.9
		06/20/96	410	7.15	2.00	27.1
		09/19/96	455	7.49	1.74	22.1
EPA MW5-01 (Zone 9)	523-533	03/13/96	520	7.85	5.60	17.8
		06/20/96	600	7.10	2.13	26.7
		09/19/96	620	7.73	1.55	22.2
EPA MW5-01 (Zone 10)	430-440	03/13/96	560	7.96	1.13	17.9
		06/20/96	310	7.13	2.14	26.8
		09/19/96	623	7.57	1.61	22.1
EPA MW5-01 (Zone 11)	335-345	03/13/96	710	8.14	1.59	17.8
		06/20/96	720	7.41	1.85	26.8
		09/19/96	630	7.93	1.93	23.0
EPA MW5-01 (Zone 12)	287-297	03/13/96	493	8.21	1.03	17.7
		06/20/96	640	7.43	2.90	26.3
		09/19/96	590	7.94	1.66	22.5
EPA MW5-01 (Zone 13)	216-226	03/13/96	369	8.74	0.83	16.9
		06/20/96	401	8.07	4.06	26.6
		09/19/96	431	—	1.60	23.7

Notes:

μmhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 474.41 feet above MSL

Top of multiport casing = 473.83 feet above MSL

— = Measurement not recorded

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
MW5-03

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (µmhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
MW5-03 (Zone 1)	1150-1160	08/04/95	1,130	6.85	130	23.1
		09/25/95	900	7.69	5.20	21.5
		03/18/96	730	7.82	1.74	17.5
		06/17/96	610	7.81	3.35	25.1
		09/16/96	600	8.60	3.36	20.0
MW5-03 (Zone 2)	1015-1025	08/04/95	1,110	7.11	153	22.8
		09/25/95	910	8.01	4.14	21.0
		03/18/96	750	8.27	2.29	18.8
		06/17/96	710	8.17	4.53	26.7
		09/16/96	600	9.38	2.26	20.5
MW5-03 (Zone 3)	920-930	08/04/95	1,190	6.99	141	24.9
		09/26/95	700	8.30	16.5	21.0
		03/18/96	485	9.99	4.42	18.0
		06/17/96	510	8.65	4.15	28.1
		09/16/96	475	9.17	2.10	20.8
MW5-03 (Zone 4)	810-820	08/04/95	1,180	7.02	198	23.9
		09/26/95	920	7.58	22.2	20.9
		03/18/96	801	8.19	3.05	18.8
		06/18/96	773	7.55	2.28	24.5
		09/16/96	650	8.75	1.85	21.0
MW5-03 (Zone 5)	670-680	08/04/95	1,120	7.15	60.1	24.0
		09/26/95	810	7.87	9.20	22.1
		03/18/96	488	8.88	1.50	17.7
		06/18/96	500	7.98	2.42	24.5
		09/17/96	475	9.53	1.67	20.0
MW5-03 (Zone 6)	590-600	08/04/95	1,090	6.79	77.2	25.3
		09/26/95	390	7.99	6.62	22.2
		03/19/96	400	7.49	1.15	16.4
		06/18/96	300	8.87	1.97	26.2
		09/17/96	400	8.26	1.14	21.0
MW5-03 (Zone 7)	510-520	08/04/95	1,010	6.86	62.6	23.5
		09/26/95	480	7.54	3.14	22.0
		03/19/96	375	8.14	0.96	17.2
		06/18/96	390	7.99	2.86	28.2
		09/17/96	300	9.35	1.94	21.0
MW5-03 (Zone 8)	400-410	08/04/95	980	6.80	39.0	23.8
		09/26/95	580	7.75	6.31	21.0
		03/19/96	580	8.02	1.47	17.7
		06/18/96	510	7.68	1.96	27.9
		09/17/96	600	7.80	2.91	22.0

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
MW5-03

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (µmhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
MW5-03 (Zone 9)	300-310	08/04/95	910	6.77	8.40	23.2
		09/27/95	870	7.12	0.73	19.8
		03/19/96	1,520	7.31	0.93	18.5
		06/18/96	1,410	6.99	1.75	26.1
		09/17/96	302	7.08	1.83	24.0
MW5-03 (Zone 10)	235-245	08/04/95	1,260	6.76	7.60	22.7
		09/27/95	1,180	7.34	3.30	20.9
		03/19/96	1,200	7.28	1.30	18.6
		06/18/96	1,300	6.82	2.43	26.0
		09/17/96	475	9.53	1.67	20.0

Notes:

µmhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 474.41 feet above MSL

Top of multiport casing = 473.83 feet above MSL

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
MW5-05

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (μmhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
MW5-05 (Zone 1)	552-562	08/16/95	510	8.21	14.40	22.0
		10/12/95	391	7.51	1.46	20.2
		10/30/95	350	7.77	1.67	20.9
		03/20/96	355	7.91	1.31	17.5
		06/21/96	370	6.74	0.25	16.4
		09/23/96	380	8.23	4.60	20.0
MW5-05 (Zone 2)	464-474	08/16/95	510	8.73	4.74	24.9
		10/12/95	287	8.68	2.30	20.2
		10/30/95	300	8.54	0.80	19.5
		03/20/96	265	8.75	1.98	17.0
		06/21/96	290	7.20	0.72	17.0
		09/23/96	328	8.69	1.91	20.0
MW5-05 (Zone 3)	380-390	08/16/95	451	7.99	6.30	26.0
		10/12/95	369	7.72	2.07	20.8
		10/30/95	300	7.86	1.48	19.9
		03/20/96	398	7.73	1.10	16.6
		06/21/96	379	7.34	0.84	17.3
		09/23/96	392	8.24	1.96	20.0
MW5-05 (Zone 4)	218-228	08/16/95	590	8.00	4.05	26.8
		10/12/95	500	7.51	1.74	19.8
		10/30/95	300	7.99	0.51	18.2
		03/20/96	399	7.85	1.00	16.2
		06/21/96	580	7.24	2.48	18.0
		09/23/96	560	8.18	1.92	19.5

Notes:

μmhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 342.52 feet above MSL

Top of multiport casing = 342.18 feet above MSL

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured at Sampling
MW5-08

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (μ mhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
MW5-08 (Zone 1)	795-805	08/13/96	400	8.04	138 [@]	25.0
		09/24/96	400	8.18	8.12	23.5
MW5-08 (Zone 2)	670-680	08/13/96	350	8.25	6.80	26.5
		09/24/96	328	8.50	4.53	22.0
MW5-08 (Zone 3)	554-564	08/13/96	350	8.00	1.66	25.0
		09/24/96	368	8.13	5.05	21.0
MW5-08 (Zone 4)	380-390	08/13/96	349	7.86	2.35	25.0
		09/24/96	350	8.10	5.15	21.0

Notes:

μ mhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 339.20 feet above MSL

Top of MP casing elevation = 338.48 feet above MSL

-- = Not measured

[@] Turbidity measured at time of sampling (i.e., second sample withdrawn from zone 1) was 15.9 NTUs

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
MW5-11

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (μmhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
MW5-11 (Zone 1)	690-700	10/10/95	480	7.30	35.6	20.5
		11/13/95	465	7.42	12.5	21.0
		03/14/96	315	7.41	1.08	16.0
		06/24/96	300	7.68	1.44	22.9
		09/20/96	310	8.72	6.15	24.0
MW5-11 (Zone 2)	530-540	10/10/95	500	7.80	40.0	22.0
		11/13/95	448	8.99	8.65	20.4
		03/14/96	361	9.39	1.10	16.4
		06/24/96	360	8.43	1.59	23.1
		09/20/96	375	8.23	6.12	24.0
MW5-11 (Zone 3)	310-320	10/10/95	510	7.49	75.3	22.5
		11/13/95	510	7.53	10.9	20.2
		03/14/96	590	7.47	10.1	16.6
		06/24/96	570	7.11	24.7	23.5
		09/20/96	590	7.71	13.2	22.0

Notes:

μmhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 493.6 feet above MSL

Top of MP casing elevation = 495.41 feet above MSL

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
MW5-13

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (μ mhos/cm)	pH (su)	Turbidity (NTU)	Temperature (°C)
MW5-13 (Zone 3)	340-350	01/18/96	445	7.54	1.09	18.3
		02/15/96	482	7.86	4.47	19.9
		03/14/96	452	7.70	0.85	16.0
		06/21/96	478	7.20	2.37	20.7
		09/19/96	491	7.77	3.09	25.0
MW5-13 (Zone 2)	520-530	01/18/96	437	8.24	85.3	18.5
		02/15/96	482	8.24	14.9	20.4
		03/14/96	461	8.03	1.62	15.9
		06/21/96	482	7.39	6.63	20.1
		09/19/96	439	8.15	9.36	24.7
MW5-13 (Zone 1)	684-694	01/18/96	408	8.24	85.8	18.3
		02/15/96	369	8.61	7.71	20.4
		03/14/96	349	8.54	1.00	17.3
		06/21/96	340	8.06	3.35	19.9
		09/19/96	368	9.17	3.61	23.1

Notes:

μ mhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 530.8 feet above MSL

Top of MP casing elevation = 533.74 feet above MSL

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
MW5-15

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (μ mhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
MW5-15 (Zone 1)	670-680	07/09/96	500	8.02	115	18.8
		08/13/96	485	7.86	4.27	25.5
		09/23/96	500	8.09	5.18	23.0
MW5-15 (Zone 2)	450-560	07/09/96	500	7.87	6.93	18.3
		08/13/96	475	8.00	1.92	24.5
		09/23/96	492	8.06	3.9	22.5
MW5-15 (Zone 3)	235-245	07/09/96	500	7.93	3.00	18.7
		08/13/96	412	8.30	1.28	25.0
		09/23/96	459	8.39	2.84	21.0

Notes:

μ mhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 359.99 feet above MSL

Top of MP casing elevation = 359.06 feet above MSL

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
MW5-17

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (µmhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
MW5-17 (Zone 1)	698-708	10/30/95	470	7.84	10.75	23.0
		11/30/95	471	7.43	2.57	20.5
		03/15/96	398	8.14	2.35	15.4
		06/24/96	300	7.68	1.44	22.9
		09/20/96	435	8.34	2.88	20.5
MW5-17 (Zone 2)	540-550	10/30/95	520	7.77	14.67	22.5
		11/30/95	510	7.58	1.55	18.8
		03/15/96	510	7.95	2.20	16.3
		06/24/96	360	8.43	1.59	23.1
		09/20/96	560	8.02	3.20	20.0
MW5-17 (Zone 3)	305-315	10/30/95	550	7.53	4.53	21.4
		11/30/95	550	7.52	1.83	18.5
		06/24/96	570	7.11	24.7	23.5
		03/15/96	600	7.91	2.92	15.6
		09/20/96	580	7.43	3.36	23.0

Notes:

µmhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 509.4 feet above MSL

Top of MP casing elevation = 511.15 feet above MSL

Appendix C
Baldwin Park Operable Unit
Field Parameters Measured During Sampling
MW5-18

Well ID	Screened Interval (feet bgs)	Sampling Date	Electrical Conductivity (μ mhos/cm)	pH (SU)	Turbidity (NTU)	Temperature (°C)
MW5-18 (Zone 1)	780-790	06/03/96	422	8.23	46.2	24.5
		07/09/96	446	7.22	1.81	18.2
		09/23/96	700	7.79	2.5	23.5
MW5-18 (Zone 2)	630-640	06/03/96	491	7.81	39.2	23.9
		07/09/96	480	7.54	3.82	18.5
		09/23/96	495	7.95	2.16	21.5
MW5-18 (Zone 3)	500-510	06/03/96	700	7.79	38.8	22.8
		07/09/96	700	7.47	3.54	19.0
		09/23/96	401	8.06	2.35	20.5

Notes:

μ mhos/cm = micromhos per centimeter

SU = standard unit

NTU = nephelometric turbidity unit

bgs = below ground surface

MSL = mean sea level

Ground surface elevation = 494.36 feet above MSL

Top of MP casing elevation = 494.07 feet above MSL

Well No.: <u>NORAC</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>6/27/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-0474-KAMP</u>	
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: _____	Well Casing Material: <u>PVC</u> <u>SS</u> Other: _____	
Well Headspace: _____	PID (ppm): _____	FID (ppm): _____
Sampler: <u>IM</u>		

Total Depth of Well (feet): 315-340 Reference Point: Top of well Datum: _____
 Depth to Water (feet): 243.80
 Water Column Height (feet): 96.20 (X) 4" - 0.65 Gal/feet = 62.53 (X) 3 = 187.59 Minimum Purge Volume (Gallons)
 2" - 0.16
 6" - 1.47

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☒ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐
 (Piston Pump) →
 Pump Make/Model: Lg Man Extraction Dryer 50 scfm skids Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): ~330 Purge/Decon Water Containerized? Y ☒ N ☐ Container Type/Volume? DOT E 937, 400 gallons

Time	Gallons	Temp. (°F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0913	3.8	25.5	6.98	610	4.23		clear, no bubbles.
0923	46.8	23.4	6.88	580	2.72		clear, with bubble
0935							Pump on.
0936	45.6	24.3	7.06	580	3.00		some bubbles clear.
0946	83.6	23.6	6.99	599	2.78		is in 30 sec
0956	121.6	23.6	6.96	590	2.80		5 gallon in 1.31, 1.9 sec 3.8 gpm
1006	159.6	23.8	6.98	590	2.00		some bubbles, clear
1016	197.6	24.2	6.96	590	5.32		some bubbles, clear

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 500 ml / 18.18 sec
 Baller: ☐ Type: _____
 Others: ☐ Desc.: _____
 Sample ID: BP-GW-WIDNCLMWI-
 Dup. ID (if appl.): 062796
 Sample Time: 1020

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8021</u>	<u>3-40 ml VOA's</u>	<u>HCL</u>

CDM

 environmental engineers, scientists,
 planners, & management consultants

MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>NORAC</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>9-27-96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CG</u>	
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Others: _____	Well Casing Material: <u>PVC</u> SS Others: _____	
Well Headspace: _____	PID (ppm): _____	FID (ppm): _____
Sampler: <u>MUPJZ</u>		

Total Depth of Well (feet): 340 Reference Point: Top of casing Datum: _____
Depth to Water (feet): 242.42 - 0.16
Water Column Height (feet): 97.75 242.42 (X) 2" - 0.16 4" - 0.65 6" - 1.47 Gal/feet = 63.53 157.44 (X) 3 = 190.61 472.39 Minimum Purge Volume (Gallons)

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☒ Hand Pump ☐ Peristaltic Pump ☐ Bailor: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐
Pump Make/Model: LG Man Extraction Dryer 50sc fm series Purge Equipment Decon'd? Y ☒ N ☐

Depth of Pump Intake (feet): ~330 Purge/Decon Water Containerized? Y ☐ N ☐ Container Type/Volume? Poly tank 900 gallon

Pump on 0950

Time	Gallons	Temp. (C / F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0950	~0.5	23.0	7.37	600	2.77	clear	2.6 gpm
0950	21.3	22.0	7.48	525	4.32	clear	
0950	42.10	19.8	7.44	525	3.53	clear	
1014	62.90	19.8	7.57	525	4.01	clear	
1024	88.9	19.5	7.59	525	4.80	clear	
1032	109.7	19.5	7.46	525	4.13	clear	
1040	133.10	19.5	7.50	525	3.71	clear	
1049	153.90	19.5	7.40	650	5.40	clear	
1057	174.70	20.0	7.47	525	4.83	clear	
1100	192.5	20.0	7.41	525	4.02	clear	
1105	195.5						Sample

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: _____
Bailer: ☐ Type: _____
Other: ☐ Desc.: _____

Sample ID: BP-GW-W10N1CMW1-04279

Dup. ID (if appl.): _____

Sample Time: 1105

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8260</u>	<u>340ml VOA</u>	<u>HCL</u>

CDMenvironmental engineers, scientists,
planners, & management consultants

MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>Baldwin 3</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>10/17/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CG</u>	
Well Casing Diameter: <u>2" 4" 6" Others:</u>	Well Casing Material: <u>PVC SS Others:</u>	
Well Headspace:	PID (ppm): <u> </u>	FID (ppm): <u> </u>
Sampler: <u>MWDZ</u>		

Total Depth of Well (feet): 500 Reference Point: Top of sand layer Datum:
 Depth to Water (feet): 153
 Water Column Height (feet): 347 (X) 26 - 21.40 Gal/feet = 9507.8 (X) 3 = 28523.4 Minimum Purge Volume (Gallons)

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐
 Pump Make/Model: Production Well Purge Equipment Decon'd? Y ☐ N ☐
 Depth of Pump Intake (feet): ? Purge/Decon Water Containerized? Y ☐ N ☐ Container Type/Volume? INTO SYSTEM

Purge on @ 1134

Time	Gallons	Temp. (C / F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
1137	7200	20.0	7.74	485	7.09	clear	2400 gpm
1140	18400	19.5	7.74	485	6.51	clear	
1143	21600	19.2	7.71	478	5.13	clear	
1146	28800	19.1	7.69	480	4.14	clear	

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 400 ml in 23 sec
 Baller: ☐ Type:
 Other: ☐ Desc.:
 Sample ID: BP-GW-0900882-101796
 Dup. ID (if appl.):
 Sample Time: 1149

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
BZ60	6-yrnd VOPS clear	HCL
Radon	4-yrnd VOPS silver	none
Metals	1-1000 ml poly	↓
Gen. Mineral	1-1000 ml poly	↓

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MONITORING WELL PURGE AND SAMPLING FORM

I:\PROJECTS\2581-112\CAD\

Well No.: <u>Dubin</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>6/27/94</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CGTV-SAMP</u>	
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: <u> </u>	Well Casing Material: <u>PVC</u> <u>SS</u> Other: <u> </u>	
Well Headspace: <u> </u>	PID (ppm): <u> </u>	FID (ppm): <u> </u>
Sampler: <u>IM</u>		

NOTE: PUMP STARTED AT 0600 THIS MORNING.

Total Depth of Well (feet): 500 Reference Point: _____ Datum: _____

Depth to Water (feet): (~80) 2" - 0.16

Water Column Height (feet): 420 (X) 4" - 0.65 Gal./feet = 6,850 (X) 3 = 20,551 Minimum Purge Volume (Gallons)

6" - 1.47

20 " - 16.31

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Bailor: PVC ☐
Teflon ☐
SS ☐
Disposable ☐

Pump Make/Model: Production Well Purge Equipment Decon'd? Y ☐ N ☒

Depth of Pump Intake (feet): _____ Purge/Decon Water Containerized? Y ☐ N ☒ Container Type/Volume? not applied

[illegible]

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: _____

Ballor: ☐ Type: _____

Other: ☐ Desc.: _____

Sample ID: BP-GW-019C2126-062796

Dup. ID (if appl.): _____

Sample Time: 0800

SAMPLE ANALYSES:		
Method:	Container Type/Vol.	Preservative
8021	3 40-ml VOA's	HCL

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>Kaywell</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>9-25-96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-BQTY-SAMP</u>	
Well Casing Diameters: <u>2" 4" 6" Other: 5"</u>	Well Casing Material: <u>PVC</u>	SS <input type="checkbox"/> Other: <input type="checkbox"/>
Well Headspace: <u> </u>	PID (ppm): <u> </u>	FID (ppm): <u> </u>
Sampler: <u>MUNZ</u>		

Total Depth of Well (feet): 283 Reference Point: Top of stand pipe Datum:

Depth to Water (feet): 141.20

Water Column Height (feet): 141.8 (X) 4" - 0.65 Gal/feet = 143.22 (X) 3 = 430.0 Minimum Purge Volume (Gallons)

5" - 1.47

5" - 1.01

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Bailor: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐

Pump Make/Model: Submersible Pump Grundfos SHP 21" Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): 160' Purge/Decon Water Y ☐ N ☐ Container Type/Volume? Poly tank 625

Pump on 0917

Time	Gallons	Temp. (C / F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0917	0	21.0	7.43	585	16.32	bubble	Don't start before 9AM
0923	6	19.0	7.30	—	4.11	—	5.26 gpm
0930	147	19.0	7.31	550	4.06	bubble	small bubbles, but clear.
0938	89	19.0	7.51	500	3.80	"	Pump off
0946	131	19.5	7.59	500	3.09	"	
0954	173	19.5	7.59	520	2.83	"	
1002	215	19.5	7.58	550	2.64	"	
1010	254	20.0	7.68	560	4.49	"	Problem with pump on + off!!
1024	289	19.5	7.65	550	3.07	"	
1034	350	19.5	7.48	550	2.66	"	
1044	430	19.5	7.55	550	2.38	"	
	430						

Pump off 1104

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 200 ml 24 sec

Bailer: ☐ Type:

Other: ☐ Desc.:

Sample ID: BQW-21000006-092596Dup. ID (if appl.): Sample Time: 1040 H20 1100

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
B260 WDC	3-40ml WDCs	HCL
3000 Nitrate + Nitrite	1-250ml poly	none

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>Keywell</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>6/25/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CG</u>	
Well Casing Diameter: <u>2" 43</u> <u>6"</u> Other: <u>5"</u>	Well Casing Material: <u>PVC</u> <u>SS</u> Other:	
Well Headspace:	PID (ppm): <u> </u>	FID (ppm): <u> </u>
Sampler: <u>MU002</u>		

Total Depth of Well (feet): 283
298
 Depth to Water (feet): 139.93
 Water Column Height (feet): 143.07 (X) 2" - 0.16 Gal/feet = 144.50
4" - 0.65 Gal/feet = 92.99 (X) 3 = 278.98 Minimum Purge Volume (Gallons)
6" - 1.47
5" - 1.0

PURGE METHOD:

Submersible Pump ☒Bladder Pump ☐Hand Pump ☐Peristaltic Pump ☐

Baller:

PVC ☐Teflon ☐SS ☐Disposable ☐

Pump Make/Model:

Grundfos 0.8HPPurge Equipment Decon'd? Y ☐ N ☐Depth of Pump Intake (feet): 160Purge/Decon Water Containerized? Y ☒ N ☐

Container Type/Volume?

5gal Tank

Pump start @ 0858

Time	Gallons	Temp. (C/F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other WL	Observations/Comments
0900	<u>4.63</u>	<u>25.6</u>	<u>6.36</u>	<u>600</u>	<u>2.57</u>	<u>—</u>	<u>4.63 gpm / some sediment</u>
0910	<u>56.16</u>	<u>23.0</u>	<u>6.80</u>	<u>580</u>	<u>1.11</u>	<u>—</u>	<u>bubbles in CW, some black sediment</u>
0920	<u>102.96</u>	<u>23.0</u>	<u>6.82</u>	<u>580</u>	<u>1.3</u>	<u>—</u>	
0930	<u>149.76</u>	<u>23.1</u>	<u>6.84</u>	<u>585</u>	<u>1.71</u>	<u>139.97</u>	<u>Bubbles in CW / clear</u>
0940	<u>196.56</u>	<u>23.3</u>	<u>6.96</u>	<u>585</u>	<u>1.13</u>	<u>—</u>	<u>Bubble in CW / clear</u>
0950	<u>243.36</u>	<u>23.3</u>	<u>7.01</u>	<u>585</u>	<u>0.8</u>	<u>—</u>	<u>Bubbles in CW / clear</u>
1000	<u>290.16</u>	<u>23.4</u>	<u>6.94</u>	<u>580</u>	<u>1.01</u>	<u>—</u>	" "
1010	<u>336.96</u>	<u>23.4</u>	<u>7.02</u>	<u>585</u>	<u>1.0</u>	<u>—</u>	" "
1020	<u>383.76</u>	<u>24.1</u>	<u>7.01</u>	<u>585</u>	<u>1.67</u>	<u>—</u>	" "
1030	<u>430.56</u>	<u>23.4</u>	<u>7.02</u>	<u>585</u>	<u>1.50</u>	<u>—</u>	" "
7031	<u>435.24</u>						

SAMPLE COLLECTION METHOD:

Pump: ☒Flow rate: 20.4 gpmBaller: ☐Type: Other: ☐Desc.:

Sample ID:

BP-6W-21000006-069596Dup. ID (if appl.):

Sample Time:

7035

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>2021 VOC</u>	<u>3-40ml vials</u>	<u>HCL</u>
<u>Nitrate 300</u>	<u>150-ml poly</u>	<u>none</u>

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>Z1000006/303F</u>	Site: <u>Key Well</u>	Date: <u>4/19/96</u>
Client: <u>WQA</u>	Project No.: <u>2581-112-T4-SAMP</u>	
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: <u>5"</u>	Well Casing Material: <u>PVC</u>	SS Other:
Well Headspace:	PID (ppm):	FID (ppm):
Sampler: <u>S. TANNEHILL</u>		

Total Depth of Well (feet): 283.00 Reference Point: TOC Natchin PVC Datum: _____
 Depth to Water (feet): 139.01 $\left(\frac{5}{12}\right)^2 \pi \times 143.39 \times 7.48$
 Water Column Height (feet): 143.39 (X) $\frac{4"}{6"} - 0.16$ Gal/feet = 146.25 (X) 3 = 438.74 Minimum Purge Volume (Gallons)
 $\frac{4"}{6"} - 0.65$
 $\frac{4"}{6"} - 1.47$

PURGE METHOD:

Submersible Pump ☒ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Boiler: PVC ☐ Teflon ☐ SS ☐ Disposable ☐
 Pump Make/Model: 2" Grundfos/Ready flow 2 - 6 to 6.5 gpm Purge Equipment Decon'd? ☒ Y ☐ N
 Depth of Pump Intake (feet): ~160 Purge/Decon Water Containerized? ☒ Y ☐ N Container Type/Volume? _____

Time	Gallons	Temp. (C/F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	DO (ppm)	Eh (mV)	Observations/Comments
8:55	~37	18.5	6.82	700	1.53			Q=4.11 gpm, 8:56 pump on
9:01	~62	18.0	6.89	601	0.35			
9:05	~78	18.1	7.10	600	0.75			
9:10	~98	17.9	7.16	580	0.91			
9:18	~132	18.0	7.20	580	0.78			
9:25	~160	18.4	7.25	580	0.73			* 9:26 pump died, 9:30 pump back on
9:36	~206	18.7	7.26	599	0.74			* 9:45, pump back on
9:46	~230	18.4	7.26	580	0.65			* 9:56 pump off, 9:57 p
9:54	~263	18.4	7.28	580	0.44			* 9:56 pump off, 9:57 pump on
10:03	~296	19.3	7.32	599	0.46			
10:19	~382	19.0	7.29	595	0.42			
10:38	~300**	19.6	7.36	600	0.36			Value measured in tank 4 x 6.667 x = x 7.48 =
11:15	~416	21.0	7.48	600	0.98			
11:37	~447	20.5	7.38	600	1.12			ready to sample

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 4.11 gpm
 Boiler: ☐ Type: _____
 Other: ☐ Desc.: _____

Sample ID: BP-GW-Z1000006-04/19/96
 Dup. ID (if appl.): _____
 Sample Time: 11:45

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
9021	3-40 ml VOA's	HCl
9021	2-40 ml VOA's	
Metals, Cations, TDS, TSS	2-1L Poly	
Radon-	1-125 ml Amber	

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>Santa Fe Well</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>9-20-96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-0614-SAMP</u>	
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: <u>20</u>	Well Casing Material: <u>PVC</u> <u>SS</u> Other:	
Well Headspace:	PID (ppm):	FID (ppm):
Sampler: <u>Munoz, Dees</u>		

Total Depth of Well (feet): 451 Reference Point: _____ Datum: _____
 Depth to Water (feet): ~200
 Water Column Height (feet): 251 (X) 20" - 0.16 Gal/feet = 4,093.81 (X) 3 = 12,281.43 Minimum Purge Volume (Gallons)
20" - 0.65
20" - 1.47

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐
 Pump Make/Model: Production Well; General Pump Purge Equipment Decon'd? Y ☐ N ☐
 Depth of Pump Intake (feet): ~200? Purge/Decon Water Containerized? Y ☐ N ☐ Container Type/Volume? N/A (Lake)

Pump 0807

Time	Gallons	Temp. (C) F	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0808		18.5	7.88	349	3.10	clear	~1000 gallons; clear bubble
0812		18.5	7.83	358	3.53	clear	10,000 gallons
0821		18.5	7.80	350	3.50	clear	total 22,055,3000
Pump off		0822					empty storage
Pump on		0839					
0840		19.0	7.89	358	2.10	clear	
0842		19.0	7.87	358	2.10	clear	

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 40ml in 30sec
 Baller: ☐ Type: _____
 Other: ☐ Desc.: _____
 Sample ID: B-6W-080000 7-09-2096
 Dup. ID (if appl.): _____
 Sample Time: 0815 0850

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8260</u>	<u>3-40ml VOA</u>	<u>HCL</u>

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>MURADA</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>9/24/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CG</u>	
Well Casing Diameter: <u>2" 4" 6" Other: 20</u>	Well Casing Material: <u>PVC</u>	<u>SS</u> Other:
Well Headspace:	PID (ppm):	FID (ppm):
Sampler: <u>MUDOTZ</u>		

Total Depth of Well (feet): 600 Reference Point: _____ Datum: _____
 Depth to Water (feet): ~221
 Water Column Height (feet): 379 (X) 20" - 16.31 Gal/feet = 6,181.5 (X) 3 = 18,544.5 Minimum Purge Volume (Gallons)

PURGE METHOD:

Submersible Pump ☒Bladder Pump ☐Hand Pump ☐Peristaltic Pump ☐

Bailer:

PVC ☐
 Teflon ☐
 SS ☐
 Disposable ☐

Pump Make/Model:

Production WellPurge Equipment Decon'd? Y ☐ N ☐Bileston K

Depth of Pump Intake (feet): _____

Purge/Decon Water Containerized? Y ☐ N ☐Container Type/Volume? 1124; 907 MEATotal 50817.000

Time	Gallons	Temp. (°/F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0854 ⁴²	~1000	20.0°C	8.22	350	11.28	Turbid	Upon UBT2 ~1200 gpm
0858 ⁴⁶		19.5	7.10	720	11.35	debaic turbid	
0852 ⁴⁸		19.5	7.00	750	6.60	"	
0853		19.5	7.04	720	4.97	"	50829,000
0856		19.8	7.00	750	3.72	algae	50835,000

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 40ml in 15 sec
 Bailer: ☐ Type: _____
 Other: ☐ Desc.: _____
 Sample ID: BP-GW-1900029-092496
 Dup. ID (if appl.): _____
 Sample Time: 0900

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
8260 VOC	3-40ml UDBs	HCL
3000 Metals	1-250ml poly	Unpreserved

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>100054</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>7/1/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CG-^{TY} Camp</u>	
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: <u>20</u>	Well Casing Material: <u>PVC</u> <u>SS</u> Other:	
Well Headspace:	PID (ppm):	FID (ppm):
Sampler: <u>MURDOZ</u>		

Total Depth of Well (feet): 600 Reference Point: Seelye Level Datum: _____
 Depth to Water (feet): 221.03
 2" - 0.16
 Water Column Height (feet): 378.97 (X) 4" - 0.65 Gal/feet = 6,184.34 (X) 3 = 18,553.08 Minimum Purge Volume (Gallons)
 6" - 1.47

PURGE METHOD:

20" - 16.31Submersible Pump ☒Bladder Pump ☐Hand Pump ☐Peristaltic Pump ☐

Bailer:

PVC ☐Teflon ☐SS ☐Disposable ☐Pump Make/Model: Proportioner WellPurge Equipment Decon'd? Y ☐ N ☐Depth of Pump Intake (feet): 3Purge/Decon Water Containerized? Y ☐ N ☐Container Type/Volume? 2000gallons

Time	Gallons	Temp. (C) (F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
1125	1000	—	—	110	30.0	—	1000 gal. green stuff on wall + water level
1130		24.3	6.15	810	15.0	—	
1132		24.2	6.53	790	17.6	—	green stuff, white water
1134		24.2	6.63	790	13.0	—	algae, green, bubbles
1137		24.4	6.62	790	8.3	—	algae, bubble
1140		25.2	6.64	799	14.1	—	

SAMPLE COLLECTION METHOD:

Pump: ☒Flow rate: 1 gal + 12 secBailer: ☐

Type: _____

Other: ☐

Desc.: _____

Sample ID: BPGW-1900029-070196Dup. ID (if appl.): Field BlankSample Time: 1145

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>BD21</u>	<u>3-40 ml VOA's</u>	<u>HCL</u>

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>MORADA WELL</u> <u>MWS</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>3/26/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>		Project No.: <u>2581-112-66-WQ-SAMP</u>
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: <u>~16"</u>	Well Casing Material: <u>PVC</u> <u>SS</u> Other:	
Well Headspace:	PID (ppm):	FID (ppm):
Sampler: <u>MUDZ / SR1</u>		

Total Depth of Well (feet): 600 ⁽⁶⁴⁵⁾ Reference Point: DM 222.24 Top of sounding tube Datum: _____

Depth to Water (feet): 222.24

Water Column Height (feet): 377.76 (X) 2" - 0.16 4" - 0.65 6" - 1.47 Gal/feet = 3864.87 (X) 3 = 11594.61 Minimum Purge Volume (Gallons)

PURGE METHOD: 16" - 10.23 (?)

Submersible Pump ☒ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Bailor: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐

Pump Make/Model: Production well Purge Equipment Decon'd? Y ☒ N ☐

Depth of Pump Intake (feet): _____ Purge/Decon Water Containerized? Y ☐ N ☒ Container Type/Volume? 500L tank

Time	Gallons	Temp. (C/F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0856	~900	17.8	6.38	830	20.5	light brown	USING GESSYATEC EQUIPMENT
0903	6300	18.0	7.01	837	8.34	Clear	
091805	8300	18.7	6.94	838	4.1	Clear	WL = 225.11' Top of sound.
0918	21,300	18.9	6.96	833	2.6	Clear	
0928	35,000	19.3	6.97	832	2.17	Clear	24121 Totalizer
0933	39,000	18.8	6.93	833	2.02	Clear	
<div style="position: absolute; left: 100px; top: 50px; transform: rotate(-45deg); font-size: 2em;">DM</div>							

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: Bucket

Bailer: ☐ Type: _____

Other: ☐ Desc.: _____

Sample ID: 88-CW-1920 ⁰²⁹ 032696

Dup. ID (if appl.): _____

Sample Time: 0921

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>Radon</u>	<u>125mL Amber</u>	<u>NONE</u>

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>Palm Well</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>9-25-96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>		Project No.: <u>2581-112-CG</u>
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: _____	Well Casing Material: <u>PVC</u> <u>SS</u> Others: _____	
Well Headspace: _____	PID (ppm): _____	FID (ppm): _____
Sampler: <u>MUDZ</u>		

Total Depth of Well (feet): 699 Reference Point: Top of sand tube Datum: _____

Depth to Water (feet): 117

Water Column Height (feet): 582 (X) 2" - 0.16 Gal/feet 9493 (X) 3 = 28477 Minimum Purge Volume (Gallons)

4" - 0.65

6" - 1.47

20" - 16.31

PURGE METHOD:

Submersible Pump ☒ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐

Pump Make/Model: Pro Production Well Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): _____ Purge/Decon Water Containerized? Y ☐ N ☐ Container Type/Volume? 1971-1524

Start pump 1313

70912600

Time	Gallons	Temp. (C / F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
1313	500	22	8.39	250	5.99	bubbles	~1000 gpm 70913100
1317	2700	20	8.37	270	4.23	"	70916300
1322		20	7.81	348	3.38	"	very effervescent 70919300
1327		20.0	7.79	370	3.34	"	70924200
1332		20.0	7.79	350	3.19	"	70929200
1337		20.0	7.80	362	2.81	"	
1342		19.5	7.79	363	2.62	"	70939600
1347		20.0	7.78	365	3.10	"	70941500

Pump off 1349

minimum purge 70941100

SAMPLE COLLECTION METHOD:

SAMPLE ANALYSES:

Pump: ☒ Flow rate: 400 ~ 15 sec

Baller: ☐ Type: _____

Other: ☐ Desc.: _____

Sample ID: 80-GW-08000039-092596

Dup. ID (if appl.): _____

Sample Time: 1345

Method:	Container Type/Vol.	Preservative
8260 VOC	3-40 ml VOCs	HCL
300.0 NO ₂	2-250 ml poly	None

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PALM AVE.

Well No.: <u>08000039</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>7/9/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>		Project No.: <u>2581-112-CGTR-54M1</u>
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: <u>20"</u>	Well Casing Material: <u>PVC</u> <u>SS</u> Other: _____	
Well Headspace: _____	PID (ppm): _____	FID (ppm): _____
Sampler: <u>HUNDZ</u>		

Total Depth of Well (feet): 699 Reference Point: Top of sand Datum: _____

Depth to Water (feet): 122.05

Water Column Height (feet): 576.95 (X) 20" - 16.31 Gal/feet = 9415 (X) 3 = 28245.44 Minimum Purge Volume (Gallons)

PURGE METHOD:

Submersible Pump ☒ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Bailers: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐

Pump Make/Model: Production Well Purge Equipment Decon'd? Y ☐ N ☐ 2 Biker tanks

Depth of Pump Intake (feet): _____ Purge/Decon Water Containerized? Y ☐ N ☐ Container Type/Volume? _____

Time	Gallons	Temp. (C) (F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
1405	1000	24.6	7.14	192	6.98	clear	Start HOS 70,875,300
1406	2000	23.5	8.30	172	3.80	clear	no odor
1408	4800	20.6	8.51	171	3.74	clear	bubble 70,880,100
1413	12500	23.6	7.67	388	2.50	clear	bubble clear, no odor 70,887,800
1418	17500	22.4	7.69	384	2.30	clear	bubble clear, no odor 70,892,900
1424	22800	21.9	7.71	382	2.08	clear	bubble clear, no odor 70,898,100
1430	24000	23.0	7.65	432	1.27	clear	bubble clear, no odor 70,901,300
1440	37200						Pump off 70,912,500

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: _____

Bailer: ☐ Type: _____

Other: ☐ Desc.: _____

Sample ID: BP-GW-08000039-0709910

Sup. ID (if appl.): BP-GW-08000039-0709910

Sample Time: 0757; 1005

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8021</u>	<u>3-40ml LGA</u>	<u>HCL</u>

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Well No.: <u>Paddy Lane</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>9-26-96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CA-TU-SAMP</u>	
Well Casing Diameter: <u>2" 4" 6" Other: 20</u>	Well Casing Material: <u>PVC SS Other:</u>	
Well Headspace: <u>PID (ppm):</u>	FID (ppm): <u></u>	
Sampler: <u>I. Munoz</u>		

Total Depth of Well (feet): 600
 Depth to Water (feet): ~105
 Water Column Height (feet): 495 (X) 2" - 0.16
4" - 0.65 Gal/feet = 8073.45 (X) 3 = 24,220.35 Minimum Purge Volume (Gallons)
6" - 1.47
20" - 16.31

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Bailor: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐

Pump Make/Model: Production Well

Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): Purge/Decon Water Containerized? Y ☐ N ☒ Container Type/Volume? 100 + 1713

Purges @ 1400

Time	Gallons	Temp. (C / F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
1401	1500	23.0	7.54	470	20.2	slightly turb.	~1500 ppm
1405	4000	22.5	7.48	480	7.43	clear, bubble	50,878,000
1409	12,000	22.0	7.47	492	8.31	"	50 982,000
1410	15,000	22.0	7.48	480	6.52	"	884,000
1412	18,000	22.0	7.49	490	6.13	"	887,000
1414	21,000	22.0	7.49	490	3.30	"	890,000
1416	24,000	22	7.52	495	3.12	"	892,000

508 96,220

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate:
 Bailor: ☐ Type:
 Other: ☐ Desc.:

Sample ID: BP-GW-01900031-092696
 Dup. ID (if appl.):
 Sample Time: 1430

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8260</u>	<u>3-4cm LWA</u>	<u>HCL</u>
<u>320.0</u>	<u>1-250 ml ply</u>	<u>none</u>
<u>PH</u>		

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Well No.: <u>PASADILLA</u> <u>0190031</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>7/12/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>		Project No.: <u>2581-112-CG</u>
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: _____	Well Casing Material: <u>PVC</u> <u>SS</u> Other: _____	
Well Headspace: _____	PID (ppm): _____	FID (ppm): _____
Sampler: <u>T Minor</u>		

Total Depth of Well (feet): 600 Reference Point: _____ Datum: _____

Depth to Water (feet): 5592

Water Column Height (feet): 494.00 (X) 20" - 1.47 Gal/feet = 8058 (X) 3 = 24175.33 Minimum Purge Volume (Gallons)

PURGE METHOD: 20" - 1.47

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐

Pump Make/Model: Production Well Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): _____ Purge/Decon Water Containerized? Y ☒ N ☐ Container Type/Volume? Two Baker Tanks

Start pump 50787,000 ~ 5081,175

Time	Gallons	Temp. (C/F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0944	~1,000	22.6	7.49	337	30.1	same sediment	Pump on 0944 light brown 1500gpm
0946	5,000	21.6	7.55	499	6.9	bubbles + clear	clear ~1000gpm
0949	7,000	21.5	7.51	499	3.9	"	
0952	10,000	21.5	7.57	498	4.7	"	
0954	12,000	21.4	7.57	499	3.4	"	
0956	14,000	21.3	7.59	498	2.3	"	
0958	17,000	21.6	7.59	499	1.4	"	
1000	19,000	21.4	7.60	499	1.1	"	
1004	22,000	21.6	7.63	498	1.3	"	
							Pump off 507816,000

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 50 m / 14.68 sec

Baller: ☐ Type: _____

Other: ☐ Desc.: _____

Sample ID: BP6W-0190031-071296

Time: 1010 10800

Sample Time: BP6W-0190031(R)-071296

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8021</u>	<u>3-40ml VOA</u>	<u>HCL</u>
<u>Radon</u>	<u>1-100ml amber</u>	<u>none</u>
<u>Wet Chem</u>	<u>1-12 poly</u>	<u>↓</u>
<u>Metals</u>	<u>1-12 poly</u>	<u>↓</u>
<u>NO₂/NO₃</u>	<u>1-100ml poly</u>	<u>↓</u>

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Well No. <u>VAD West Marine</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>10/17/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CG</u>	
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: _____	Well Casing Material: <u>PVC</u> <u>SS</u> Other: _____	
Well Headspace: _____	PID (ppm): _____	FID (ppm): _____
Sampler: <u>MUNOZ</u>		

Total Depth of Well (feet): 600 Reference Point: _____ Datum: _____
 Depth to Water (feet): ~177
 Water Column Height (feet): 423 (X) 2" - 0.16
4" - 0.65 Gal/feet = 6899.13 (X) 3 = 20,697 Minimum Purge Volume (Gallons)
6" - 1.47
20" - 16.34

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐
☐ Teflon ☐
☐ SS ☐
☐ Disposable ☐
 Pump Make/Model: Production Well Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): _____ Purge/Decon Water Y ☐ N ☐ Container Type/Volume? well system
Fluviated 1500ppm
Purged @ 1010

Time	Gallons	Temp. (C / F)	pH	Conductivity (µmhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
1015	1,500	16.7	8.9	268	2.5	clear	last of bubble
1021	↓	16.2	7.88	270	3.7	clear	
1023	↓	16.2	7.86	280	2.5	clear	
1025	22,500	16.2	7.86	285	3.4	clear	

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 100ml/min 10sec
 Baller: ☐ Type: _____
 Other: ☐ Desc.: _____
 Sample ID: BP-6W-019000-28-101796
 Dup. ID (if appl.): _____
 Sample Time: 1025

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8240</u>	<u>40ml Lids N</u>	<u>HCL</u>

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>LAJTS</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>4/11/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>		Project No.: <u>2581-112-CG</u>
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: _____	Well Casing Material: <u>PVC</u> <u>SS</u> Other: _____	
Well Headspace: _____	PID (ppm): _____	FID (ppm): _____
Sampler: <u>MUNDZ</u>		

Total Depth of Well (feet): 600 Reference Point: _____ Datum: _____

Depth to Water (feet): ~100

Water Column Height (feet): 500 (X) 4" - 0.65 Gal/feet 8155 (X) 3 = 24,465 Minimum Purge Volume (Gallons)

6" - 1.47

~20" - 16.31

PURGE METHOD:

Submersible Pump ☒ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Bailor: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐

Pump Make/Model: _____ Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): NMP on AT 1157 Purge/Decon Water Y ☐ N ☐ Container Type/Volume? _____

Time	Gallons	Temp. (C/F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
1201	4000	21.4	7.18	580	3.80	bubbles	~1000gpm
1204	7000	19.6	7.12	600	10.90	bubbles	084041 ⁰⁰⁰
1204	10,000	19.4	7.11	598	4.40	bubbles/low	084043 ⁰⁰⁰
1209	12,000	19.3	7.12	598	4.83	"	084045 ⁰⁰⁰
1212.3	15,000	19.3	7.14	598	3.90	"	084049 ⁰⁰⁰
1216	18,000	19.4	7.13	598	2.2	"	084051 ⁰⁰⁰
1219	21,000	19.8	7.13	598	1.8	"	084055 ⁰⁰⁰
1222	24,000	19.4	7.15	598	2.6	"	084057 ⁰⁰⁰
<div style="position: absolute; bottom: 0; left: 0; width: 100%; height: 100%; border: 1px solid black; transform: rotate(-45deg); opacity: 0.5;"></div>							

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 85 gpm 10 min

Bailor: ☐ Type: _____

Other: ☐ Desc.: _____

Sample ID: GW-08000060-DH1196

Dup. ID (if appl.): BP-GW-08000060(F)

Sample Time: 1235

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8021</u>	<u>3 X 40ml VOA's</u>	
<u>GM, TDS, TSS, Metals</u>	<u>2 X 12 poly</u>	
<u>Ammon, Citric, Bicarb</u>		
<u>NO₃ + NO₂</u>		
<u>radon</u>	<u>2 X 40ml VOA's</u>	<u>kon</u>

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>BIG DARTON</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>9-23-96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-66-T4-SAMP</u>	
Well Casing Diameter: <u>2" 4" 6" Other: 20"</u>	Well Casing Material: <u>PVC SS Other:</u>	
Well Headspace: <u>PID (ppm):</u>	FID (ppm): <u></u>	
Sampler: <u>MUDVZ</u>		

Total Depth of Well (feet): 600 Reference Point: Top of sand filter Datum:
 Depth to Water (feet): 123.0
 Water Column Height (feet): 477 (X) 20" - 0.16 Gal/feet = 7779.87 (X) 3 = 23,339.61 Minimum Purge Volume (Gallons)
4" - 0.65
6" - 1.47

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐
 Teflon ☐ SS ☐ Disposable ☐
 Pump Make/Model: Prodenion unit Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): ? Purge/Decon Water Y ☐ N ☐ Container Type/Volume?:
 Containerized?

Pump@ 09453

Time	Gallons	Temp. (C / F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0946	~400	21.0	7.78	460	39.7	cloudy	Total 93340,000 TDS
0951				46			Pump shut off. 1600 TDS
0957	~100	21.0	7.79	469	7.44	clear	Restart
1000		21.0	7.69	465	6.54	clear	93371,000 1,852 gpm
1003		21.5	7.65	470	5.39	clear	93375,000 NOTE water is diverted
1005		21.0	7.69	470	6.00	clear	93378,000 total is discharging pipe
1007		22.0	7.66	472	575	clear	93383

End 383 9338 3383

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: about 15 sec
 Baller: ☐ Type:
 Other: ☐ Desc.:
 Sample ID: BP-GV-01P00035-062696
 Dup. ID (if appl.):
 Sample Time: 1020

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
8260	3-Yam LWA	HCL
3200	1-250ml poly	none

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>CAVW002</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>04/10/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CG</u>	
Well Casing Diameter: <u>2" 4" 6" Other:</u>	Well Casing Material: <u>PVC SS Other:</u>	
Well Headspace: <u>PID (ppm):</u>	FID (ppm): <u></u>	
Sampler: <u>M002</u>		

Total Depth of Well (feet): 947 Reference Point: Datum:
 Depth to Water (feet): ~80
867 2" - 0.16
 Water Column Height (feet): (X) 4" - 0.65 Gal/feet = ~14,148.42 (X) 3 = 42,445.27 Minimum Purge Volume (Gallons)
 6" - 1.47
20" - 16.31

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐
 Pump Make/Model: Production Well Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): Purge/Decon Water Containerized? Y ☐ N ☒ Container Type/Volume?

START TIME 4/09/96 PM
~2000 SPMS

Time	Gallons	Temp. (C/F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
1100		19.9	7.44	418	1.64	no bubbles seen	
1102		20.6	7.26	419	1.28	"	
1103		20.5	7.23	420	1.17	"	109315,000 gallons
1104	8,000	20.4	7.24	420	0.40	"	109318,000 gallons
<div style="border-left: 2px solid black; height: 100px; width: 100%; position: relative;"> <div style="position: absolute; top: 0; left: 0; right: 0; bottom: 0; pointer-events: none;"> <p>for sampling but pump was running since Friday before</p> </div> </div>							

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 30 sec per 100 ml
 Baller: ☐ Type:
 Other: ☐ Desc.:
 Sample ID: BP-GW-01901460-DH101
 Dup. ID (if appl.):
 Sample Time: 1110

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
8021	3X40ml WAs	HCL
General minerals	2X 1L poly	none
metals: nitrates, nitrite		
TDS, TSS, Anions		
Radon	1X+25 amber 2X40ml WAs	none

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Well No.: <u>LPV004</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>10/11/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-66</u>	<u>112-112-SAMP</u>
Well Casing Diameter: <u>2" 4" 6" Other: 12"</u>	Well Casing Material: <u>PVC SS Other:</u>	
Well Headspace: <u>PID (ppm):</u>	FID (ppm): <u></u>	
Sampler: <u>MUNOZ</u>		

Total Depth of Well (feet): 743 Reference Point: gs Datum:
 Depth to Water (feet): ~80
 Water Column Height (feet): 663 (X) 2" - 0.16 4" - 0.65 6" - 1.47 12" - 5.87
 Gal/feet = 3,892 (X) 3 = 11,675.43 Minimum Purge Volume (Gallons)

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: ☐ PVC ☐ Teflon ☐ SS ☐ Disposable ☐

Pump Make/Model: Production Well Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): Purge/Decon Water Containerized? Y ☐ N ☐ Container Type/Volume?

Start pump @ ~0930

Time	Gallons	Temp. (C / F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0945	10,500	21.0	7.62	450	6.05	clear	Bougen 79,0220,000 galls
0953	11,500	20.9	7.53	448	4.28	clear + bubbles	79,0223,000. On
0957	12,500	21.3	7.47	449	3.18	clear	79,0223,000
1000	14,000	21.3	7.45	449	3.11	clear	79,225,000
1005	16,500	21.1	7.435	449	3.19	clear	79,226,000
1006	~18,000	21.2	7.47	450	3.39	clear	79,227,000
<u>On</u>							

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 12 super 40ml
 Baller: ☐ Type:
 Other: ☐ Desc.:

Sample ID: BP-08000062-101196
 Dup. ID (if appl.): BP-08000062K-101196
 Sample Times: 1010, 1030

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
8260	6-40ml UAS	HCL
300	2-250ml poly	nan
<u>On</u>		

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Well No.: <u>B6D</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>11/5/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-00</u> <u>112.TY.DHS</u>	
Well Casing Diameter: <u>2" 4" 6" Other:</u>	Well Casing Material: <u>PVC SS Other:</u>	
Well Headspace:	PID (ppm): <u> </u>	FID (ppm): <u> </u>
Sampler: <u>MUNGS</u>		

Total Depth of Well (feet): 1078

Depth to Water (feet): ()

Water Column Height (feet): _____ (X)

Reference Point: _____ Datum: _____

2' - 0.16
4' - 0.65 Gal./foot = _____ (X) 3 = _____ Minimum Purge Volume (Gallons)
6' - 1.47

PURGE METHOD:

Submersible Pump ☐ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐

	PVC	<input type="checkbox"/>
Baller:	Teflon	<input type="checkbox"/>
	SS	<input type="checkbox"/>
	Disposable	<input type="checkbox"/>

Pump Make/Model:

Production well

Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): _____ Purge/Decon Water Containerized? Y ☐ N ☒

Container Type/ _____
Volume? .

long running since 020411/5/96

[illegible]

SAMPLE COLLECTION METHOD:

Pump: ☐ Flow rate: _____
 Baller: ☐ Type: _____
 Other: ☐ Desc.: _____

Sample ID: BB-CIV-73000098-120556

Dup. ID (if appl.): _____

Sample Time: 10:50:00

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
THW 22		

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>B6D</u> <u>MW5</u>	Site: <u>Baldwin Park Operable Unit</u>	Date: <u>4/2/96</u>
Client: <u>San Gabriel Basin Water Quality Authority</u>	Project No.: <u>2581-112-CG</u>	
Well Casing Diameter: <u>2"</u> <u>4"</u> <u>6"</u> Other: <u> </u>	Well Casing Material: <u>PVC</u> <u>SS</u> Other: <u> </u>	
Well Headspace: <u> </u>	PID (ppm): <u> </u>	FID (ppm): <u> </u>
Sampler: <u>J. Moriz</u>		

Total Depth of Well (feet): 1,078 Reference Point: ground surface Datum: _____

Depth to Water (feet):

Water Column Height (feet): _____ (X) 2" - 0.16 Gal/feet = _____ (X) 3 = _____ Minimum Purge Volume (Gallons)

_____ (X) 4" - 0.65

_____ (X) 6" - 1.47

PURGE METHOD: _____ " - _____

Submersible Pump ☒ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Bailer: PVC ☐
Teflon ☐
SS ☐
Disposable ☐

Pump Make/Model: _____ Purge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet): 0.5 m Purge/Decon Water Containerized? Y ☐ N ☐ Container Type/Volume? _____

[illegible]

SAMPLE COLLECTION METHOD:

Pump: ☒ Flow rate: 100 ml @ 34 sec
 Baller: ☐ Type: _____
 Other: ☐ Desc.: _____

Sample ID: BP-6W-7800 0093-0402
Dup. ID (if appl.): _____
Sample Time: 1045

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
8021	3 WDA's	HCL
General Mineral	1 poly LP	none
Radon	1 (25ml) amber	none
OK		

CDM

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: 13940-4	Site: Baldwin Park Operable Unit	Date: 4/12/96
Client: San Gabriel Basin Water Quality Authority	Project No.: 2581-II2-66 ^{WY} SAMP	
Well Casing Diameter: 2" 4" 6" Other: 20	Well Casing Material: PVC SS Other:	
Well Headspace:	PID (ppm):	FID (ppm):
Sampler: MURPHY		

Total Depth of Well (feet): ~90
846
 Depth to Water (feet): ~120
 Reference Point: second tube Datum: —
 Water Column Height (feet): 726 (X) 2" - 0.16
 4" - 0.65 Gal./feet = 11,841 (X) 3 = 35,523.18 Minimum Purge Volume (Gallons)
 6" - 1.47

PURGE METHOD:

PURGE METHOD: Submersible Pump

Submersible Pump ☒ Bladder Pump ☐ Hand Pump ☐ Peristaltic Pump ☐ Baller: PVC ☐
Teflon ☐
SS ☐
Disposable ☐

Pump Make/Model: Procter Well Purge Equipment Decon'd? Y ☐ N ☒

Depth of Pump Intake (feet): ~300 Purge/Decon Water Containerized? Y ☐ N ☒ Container Type/Volume? _____

WHD on 4/10/96
GPM @ 2400 gpm

[illegible]

~~SAMPLE COLLECTION METHOD:~~

Pump: ☒ Flow rate: 15 sec per 100m
 Baller: ☐ Type: _____
 Other: ☐ Desc.: _____

Sample ID: BP-GW-08000069-412
 Dup. ID (if appl.): _____
 Sample Time: 10:15

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
8021	3 X 40ml VOA's	HCl
GM, TSS, TDS	2 x 1L poly	none
Metal: bicarbonate,		
NO ₃ -NO ₂		
Radon	3 x 40	none

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MONITORING WELL PURGE AND SAMPLING FORM

Well No.: <u>74</u>	Site: Baldwin Park Operable Unit	Date: <u>7/2/96</u>
Client: San Gabriel Basin Water Quality Authority	Project No.: <u>2581-112-06 TY-SAMP</u>	
Well Casing Diameter: 2" 4" 6" Other: <u>26"</u>	Well Casing Material: PVC SS Other:	
Well Headspace:	PID (ppm):	FID (ppm):
Sampler: <u>I. Mous</u>		

Total Depth of Well (feet): 600 Reference Point: Top of sandy tube Datum: _____
 Depth to Water (feet): 266.05
 Water Column Height (feet): 333.95 (X) 2" - 0.16 Gal/feet - 9203.66 (X) 3 = 27,610.98 Minimum Purge Volume (Gallons)
 4" - 0.65
 6" - 1.47

PURGE METHOD:

Submersible Pump ☒Bladder Pump ☐Hand Pump ☐Peristaltic Pump ☐

Bailer:

 PVC ☐
 Teflon ☐
 SS ☐
 Disposable ☐

Pump Make/Model:

Production WellPurge Equipment Decon'd? Y ☐ N ☐

Depth of Pump Intake (feet):

Purge/Decon Water Y ☐ N ☐
Containerized?Container Type/Volume? 1553 + 1984 EA
~32,000 gallonsPup Stat 0929

Time	Gallons	Temp. (C / F)	pH	Conductivity (umhos/cm)	Turbidity (NTUs)	Other	Observations/Comments
0932		25.5	6.97	710	12.44		
0934	6,000	25.0	6.91	705	5.85		50761,000
0938	10,000	24.8	6.82	705	3.23		50765,000
0944	14,000	24.9	6.79	710	1.90		50769,000, clear some bubbles
0945	18,000	25.3	6.79	710	1.74		50773,000 " " "
0950	24,000	25.4	6.81	710	1.46		50779,000
0955	30,000	26.4	6.86	750	1.17		50785,000
<u>Stop ~0957</u>							

SAMPLE COLLECTION METHOD:

 Pump: ☒ Flow rate: 40ml ~ 12 sec
 Bailer: ☐ Type: _____
 Other: ☐ Desc.: _____
Sample ID: BP-GW-019000031-070296

Dup. ID (if appl.): _____

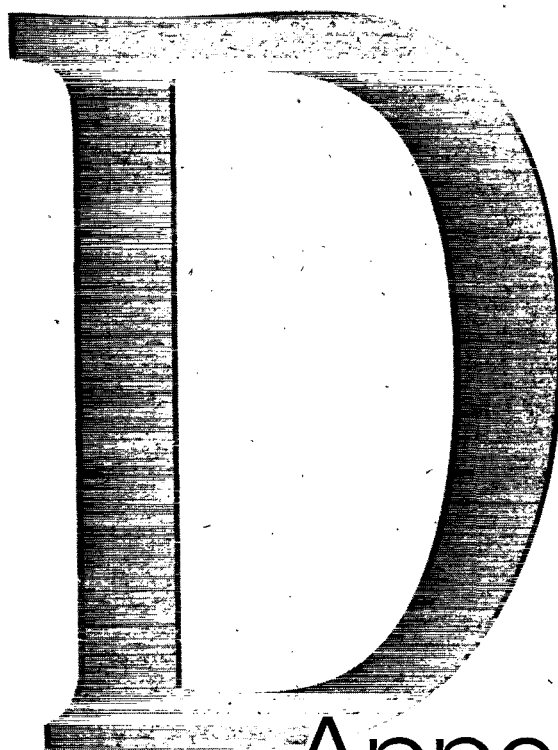
Sample Time: 0957

SAMPLE ANALYSES:

Method:	Container Type/Vol.	Preservative
<u>8021</u>	<u>3-40ml LVPs</u>	<u>NCL</u>
<u>Stop</u>		

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MONITORING WELL PURGE AND SAMPLING FORM



Appendix D

Appendix D
Data Validation Reports

**DATA REVIEW
CLP-LIKE DATA PACKAGE**

Project: Baldwin Park OU Pre-RD - Groundwater Monitoring Program

References: USEPA CLP National Functional Guidelines for Organic/Inorganic Data Review
February 1994 (EPA540/R-94/012)

SW-846 Methods, July 1992

Sampling and Analysis Plan, Baldwin Park Operable Unit Pre-Remedial Design,
Groundwater Monitoring Program, June 14, 1995

Reviewer: Todd Burgesser
CDM - Denver, Colorado

Analytical Laboratory: Thermo Analytical
Santa Ana, CA 92705

Sample ID	Laboratory ID	Sample Matrix/Type	Date		
			Sampled	Shipped	Received by Lab
BP-GW-MW51301-011896	L2980-1	Groundwater	01/18/96	01/18/96	01/18/96
BP-GW-MW51302-011896	L2980-2	Groundwater	01/18/96	01/18/96	01/18/96
BP-GW-MW51302K-011896	L2980-3	Groundwater (duplicate)	01/18/96	01/18/96	01/18/96
BP-GW-MW51303-011896	L2980-4	Groundwater	01/18/96	01/18/96	01/18/96
BP-GW-MW1303N-011896	L2980-5	Groundwater (rinsate)	01/18/96	01/18/96	01/18/96

Analyses Required (Non-CLP Methods):

L2980-1 through L2980-6
VOCs by EPA 8021

Holding Times:

Analyte	Method	Holding Time	Date			Holding Time OK? (Y/N)
			Sampled	Digested	Analyzed	
VOCs	8021	14 days	01/18/96	na	01/25 - 01/26/96	Y

**Volatile Organic Data Review
(EPA Method 8021)**

Holding Time: 14 day holding time for preserved samples. Criteria met.

Initial Calibration: Minimum 5-point calibration curve. Criteria met for all compounds.

Continuing Calibration:

Evaluation:

1/25/96 Criteria met for all compounds.

1/26/96 Criteria met for all compounds except: chloromethane and dichlorodifluoromethane. Daily RFs were greater than 15% from initial RFs.

Action: Sample results for these compounds were not detected at concentrations greater than the method detection limit. It is recommended to qualify the non detected results for these compounds as "UJ".

Blanks:

Styrene was detected in the method blank at 0.21 ug/L, and naphthalene was detected at 1.1ug/L.

Action: Styrene was detected in four of the samples at less than five times the concentration found in the method blank. All positive results for styrene should have the detection limit raised to five times the value found in the method blank and qualified as not detected "U". Naphthalene was not detected in any of the samples. No action is required.

Surrogates:

Two surrogate spikes (2-chloropropane and 1-chloro-2-fluorobenzene) were added to each environmental sample, blank and QA sample. Control limits were established by laboratory at 75 - 125 % recovery. Criteria were met for each sample.

Matrix Spike/Matrix Spike Duplicates (MS/MSDs):

Criteria were met for all compounds except benzene which had an RPD of 17 percent (0-10 percent control limit).

Action: No action will be taken on the MS/MSD data only. If further QC violations are identified then the MS/MSD violation should be considered in conjunction with the other QC violations.

Laboratory Control Sample:

Percent recovery specified in QAPjP (Table 3-6) of for each analyte. Criteria met.

Method Detection Limits and Target Compounds: Specified in QAPjP. Criteria met.

Field Blanks:

One decontamination rinsate blank (BP-GW-MW51303N-101896) was included with this sample batch. Styrene was detected at 0.23 ug/L but was also detected in the laboratory method blank. No action will be taken on this sample.

Field Duplicates

One split sample (BP-GW-MW51302K-011896) was included with this sample batch. RPD criteria were met for all detected compounds with the exception of 1,1-dichloroethene which was detected in the original sample a 0.33ug/L and in the duplicate at 0.24 ug/L with an RPD of 32 percent.

Action: No action is recommended.

Overall Assessment of Volatile Organic Data:

Due to RFs that were outside of acceptable control limits during continuing calibration checks, it is recommended that non-detected results be qualified with "UJ" for both chloromethane and dichlorofluoromethane. All positive results for styrene have been qualified "U" due to method blank violations.

All other volatile target compounds do not require qualification and are considered usable.

**DATA REVIEW
CLP-LIKE DATA PACKAGE**

Project: Baldwin OU Pre-RD - Groundwater Monitoring Program

References: USEPA CLP National Functional Guidelines for Organic/Inorganic Data Review
February 1994 (EPA540/R-94/012)

SW-846 Methods, July 1992

Sampling and Analysis Plan, Baldwin Park Operable Unit Pre-Remedial Design,
Groundwater Monitoring Program, June 14, 1995

Reviewer: Todd Burgesser
CDM - Denver, Colorado

Analytical Laboratory: Thermo Analytical
Santa Ana, CA 92705

Sample ID	Laboratory ID	Sample Matrix/Type	Date		
			Sampled	Shipped	Received by Lab
BP-GW-MW50501-101295	L2609-1	Groundwater	10/12/95	10/12/95	10/13/95
BP-GW-MW50502-101295	L2609-2	Groundwater	10/12/95	10/12/95	10/13/95
BP-GW-MW50503-101295	L2609-3	Groundwater	10/12/95	10/12/95	10/13/95
BP-GW-MW50503K-101295	L2609-4	Groundwater (duplicate)	10/12/95	10/12/95	10/13/95
BP-GW-MW50504-101295	L2609-5	Groundwater	10/12/95	10/12/95	10/13/95
BP-GW-MW50504N-101295	L2609-6	Groundwater (Rinsate Blank)	10/12/95	10/12/95	10/13/95

Analyses Required (Non-CLP Methods):

L2609-1 through L2609-6

VOCs by EPA 8021

Nitrate and Nitrite by EPA 300.0

Holding Times:

Analyte	Method	Holding Time	Date			Holding Time OK? (Y/N)
			Sampled	Digested	Analyzed	
VOCs	8021	14 days	10/12 &10/13/95	na	10/17 - 10/19/95	Y
NO ₃ and NO ₂	300.0	48 hours	10/12 & 10/13/95	na	10/13/95	Y

**Volatile Organic Data Review
(EPA Method 8021)**

Holding Time: 14 day holding time for preserved samples. Criteria met.

Initial Calibration:

Minimum 5-point calibration curve. Percent RSD criteria met for all compounds except: 1,1,2,2-tetrachloroethane and 1,2-dibromo-3-chloropropane. %RSD of RF greater than 20%. No qualification is recommended based on the out of control %RSD values because neither of these parameters were reported above the detection limit in the samples.

In addition, there are no response factors reported for the 2.5 ng (0.5ppb) initial calibration standard on the primary column for the ELCD for the following compounds: dichlorodifluoromethane, bromomethane, methylene chloride, dibromomethane, 2-chloroethyl vinyl ether, bromoform, 1,1,2,2-tetrachloroethane, and the two surrogate spike compounds. This would indicate that detection limits reported for these parameters that are less than 0.5 ug/L should be qualified as "UJ".

There was not a response factor reported for the 2.5 ng (0.5 ppb) initial calibration standard on the primary column for the PID for naphthalene. All of the nondetects for naphthalene should be qualified as "UJ".

Continuing Calibration:

Evaluation:

10/16/95 Criteria met for all compounds except: 1,2-dibromo-3-chloropropane, bromomethane, and 1,2,3-trimethylbenzene. Daily RFs were greater than 15% from initial RFs.

10/17/95 Criteria met for all compounds except: 1,1,1-trichloroethane, 1,2-dibromo-3-

chloropropane, carbon tetrachloride, chloroethane, chloromethane, cis-1,2-dichloroethene, tetrachloroethene, 1,1-dichloropropene, 1,2,4-trichlorobenzene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1,3-dichlorobenzene, cis-1,3-dichloropropene, ethylbenzene, hexachlorobutadiene, isopropylbenzene, n-butylbenzene, o-xylene, p,m-xylene, propylbenzene, sec-butylbenzene, tert-butylbenzene, tetrachloroethene, toluene, and trans-1,3-dichloropropene. Daily RFs were greater than 15% from initial RFs.

10/17/95 Criteria met for all compounds except: 1,2-dibromo-3-chloropropane, bromomethane, chloromethane, 1,3,5-trimethylbenzene and vinyl chloride. Daily RFs were greater than 15% from initial RFs.

10/18/95 Criteria met for all compounds except: 1,1,1,2-tetrachloroethane, 1,1,2,2-tetrachloroethane, 1,1,2-trichloroethane, 1,1-dichloroethane, 1,2,3-trichlorobenzene, 1,2-dibromo-3-chloropropane, 1,2-dichlorobenzene, 1,2-dichloropropene, 1,3-dichlorobenzene, 1,3-dichloropropene, 1,4-dichlorobenzene, 2-chloroethylvinylether, 2-chlorotoluene, 4-chlorotoluene, bromochloromethane, bromodichloromethane, bromoform, bromomethane, cis-1,3-dichloropropene, cis-1,2-dichloropropene, dibromochloromethane, dibromomethane, hexachlorobutadiene, trans-1,2-dichloroethene, trans-1,3-dichloropropene, 1,3,5-trimethylbenzene and naphthalene. Daily RFs were greater than 15% from initial RFs.

No qualification of the data is recommended based on the out of control continuing calibrations. If the data were quantified using the daily response factors, they should be useable for the project purposes despite the inconsistent calibrations. However, it should be noted that analyzing samples with four out of control daily calibrations, which exhibited response factors both higher and lower than the initial calibration response factors, is an obvious violation of the method requirements.

Blanks: No contaminants were detected. Criteria met.

Surrogates:

Two surrogate spikes (2-chloropropane and 1-chloro-2-fluorobenzene) were added to each environmental sample, blank and QA sample. Control limits were established by laboratory at 75 - 125 % recovery. Criteria were met for each sample.

Matrix Spike/Matrix Spike Duplicates:

Project QAPjP (Table 3-6) specified control limits for spike recoveries and for RPD between MS and MSD. Criteria met.

Laboratory Control Sample:

Percent recovery specified in QAPjP (Table 3-6) for each analyte. Criteria met.

Method Detection Limits and Target Compounds:

Specified in QAPjP. See discussion under Initial Calibration regarding detection limits. In addition, a number of parameters are qualified by the laboratory as "CE" or co-eluting with another parameter. Since the second column analysis was only a qualitative confirmation, all parameters with a laboratory "CE" qualifier should be considered to be estimated and qualified as "J". The reported concentration should be considered to be less than or equal to the reported concentration as there is no way to attribute the co-eluting concentrations to one parameter or the other.

Field Duplicates:

One split sample (BP-GW-MW50503K-101295) was included with this sample batch. RPD criteria was met for all detected compounds with the exception of chloromethane which was detected in the original sample at 1.4 ug/L and was not detected in the split sample. No action is recommended.

Field Rinsate:

There were low level detections of chloroform, chloromethane, methylene chloride, toluene and p,m-xylene in the field rinsate blank. All sample detections for these parameters that are reported at concentrations less than five times the concentration reported in the rinsate blank should be qualified as "UB".

Overall Assessment of Volatile Organic Data:

There were a number of quality issues with the volatile data. The affected results should be qualified as recommended in the preceeding paragraphs. All other data are considered to have completely fulfilled the project objectives.

**Nitrate and Nitrite Data Review
(EPA Method 300.0)**

Holding Time: 48-hour holding time for unpreserved samples. Criteria met.

Initial Calibration:

A minimum of three initial calibration standards are required for the method. There is evidence of only two being analyzed.

Initial Calibration Blank:

There were no detections in the ICB. Criteria met.

Laboratory Control Sample:

The LCS satisfied the recovery criteria for both NO_3 and NO_2 .

Matrix Spike and Matrix Spike Duplicate:

An MS and MSD were analyzed but the results were not reported on the QC summary form, and the true values of the spike amount are not indicated in the data package. No evaluation of matrix effects can be performed. The RPD between the MS and MSD do meet the required criteria.

Continuing Calibration:

The continuing calibration standard verification and blank were analyzed after the project samples. The CCV had an acceptable recovery for NO_3 and NO_2 based on the two-point initial calibration. There were no detections in the CCB.

Laboratory Control Sample Duplicate:

This sample was analyzed after the CCV. The criteria were satisfied for recovery of both NO_3 and NO_2 .

Field Duplicates: The field duplicates had a zero percent RPD for both NO_3 and NO_2 .

Field Rinsate:

There was a detection of 0.12 mg/L NO_3 in the field rinsate. However, all of the reported sample concentrations were greater than five times the blank level. No action is required.

Overall Assessment of Nitrate and Nitrite Data:

Based on the inadequate calibration data provided, and the uncertainty associated with the matrix spike data, it is recommended that all positive detections are qualified as "J", and all non-detects are qualified as "UJ" for both nitrate and nitrite.

**DATA REVIEW
CLP-LIKE DATA PACKAGE**

Project: Baldwin Park Operable Unit Pre-Remedial Design -
Groundwater Monitoring Program

References: USEPA CLP National Functional Guidelines for Organic/Inorganic Data Review
February 1994 (EPA540/R-94/012)

SW-846 Methods, July 1992

Methods for Chemical Analysis of Water and Wastes, EPA 1983 (Method 300.0
revised August 1994 [EPA600/R-93/100])

Sampling and Analysis Plan, Baldwin Park Operable Unit Pre-Remedial Design,
Groundwater Monitoring Program, June 14, 1995

Reviewer: Barbara Wells
CDM - Irvine, California

Analytical Laboratories: Thermo Analytical
Santa Ana, CA 92705

Truesdail Laboratories, Inc. (Radon analysis only)
Tustin, CA 92680

Sample ID	Laboratory ID	Sample Type/Analysis	Date		
			Sampled	Shipped	Received by Lab
BP-GW-MW50501-032096	L3224-1	Groundwater - Metals/Gen. Min.	3/20/96	3/21/96	3/21/96
	L3224-2	Groundwater - VOCs			
	L3224-3	Groundwater - Radon			
BP-GW-MW50502-032096	L3224-4	Groundwater - Metals/Gen. Min.	3/20/96	3/21/96	3/21/96
	L3224-5	Groundwater - VOCs			
	L3224-6	Groundwater - Radon			
BP-GW-MW50503-032096	L3224-7	Groundwater - Metals/Gen. Min.	3/20/96	3/21/96	3/21/96
	L3224-8	Groundwater - VOCs			
	L3224-9	Groundwater - Radon			
BP-GW-MW50504-032096	L3224-10	Groundwater - Metals/Gen. Min.	3/20/96	3/21/96	3/21/96
	L3224-11	Groundwater - VOCs			
	L3224-12	Groundwater - Radon			
BP-GW-MW50504N-032096	L3224-13	Groundwater - Metals/Gen. Min.	3/20/96	3/21/96	3/21/96
	L3224-14	Groundwater - VOCs			
BP-GW-MW50503K-032096	L3224-15	Groundwater - Metals/Gen. Min.	3/20/96	3/21/96	3/21/96
	L3224-16	Groundwater - VOCs			
	L3224-17	Groundwater - Radon			

Analyses Required (Non-CLP Methods):**L3224-1 through L3224-17**

VOCs by EPA 8021

Metals & Cations:

Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Zn, Ca, Mg, K, Na by EPA 6010

As by EPA 7060

Hg by EPA 7470

Pb by EPA 7421

Nitrate, Nitrite, Sulfate and Chloride by EPA 300.0

Alkalinity (HCO₃ & CO₃) by EPA 310.1

TDS/TSS by EPA 160.1/160.2

Hardness by EPA 130.2

Radon by Draft Method 913

Holding Times:

Analyte	Method	Holding Time	Date			Holding Time OK? (Y/N)
			Sampled	Digested	Analyzed	
VOCs	8021	14 days	3/20/96	na	3/23-25/96	Y
Metals (except Mercury), Cations	6000/ 7000	6 months	3/20/96	3/22/96	3/25-26/96	Y
Mercury	7470	28 days	3/20/96	3/22/96	3/26/96	Y
NO ₃ , NO ₂	300.0	48 hours	3/20/96	na	3/22/96	Y
Cl, SO ₄	300.0	28 days	3/20/96	na	3/22/96	Y
Alkalinity	310.1	14 days	3/20/96	na	3/25/96	Y
TDS/TSS	160.1/ 160.2	7 days	3/20/96	na	3/25/96	Y
Hardness	130.2	6 months	3/20/96	na	3/22/96	Y
Radon ²²²	913 (Draft)	24 hours	3/20/96	na	3/21/96	Y

Volatile Organic Data Review
(EPA Method 8021)

Holding Time: 14 day holding time for preserved samples. Criteria met.

Initial Calibration:

Minimum 5-point calibration curve. Percent RSD criteria of less than 20% met for all compounds.

For propylbenzene, there is no response factor reported for the 2.5 ng (0.5 ppb) initial calibration standard on the primary column for the PID. This indicates that detection limits reported for this parameter at less than 0.5 µg/L should be qualified as "UJ".

Continuing Calibration:

3/22/96
(11:33) Criteria met for all compounds except: dichlorodifluoromethane and chloromethane. For these parameters, the daily RFs were higher than the initial RFs by more than 15%. However, no samples were analyzed in this continuing calibration time range. No qualification is required.

3/22/96
(16:59) Criteria met for all compounds except: 1,2-dibromo-3-chloropropane. The daily RF was 17% higher than the initial RF.

3/22/96
(23:55) Daily RFs for each analyte were within 15% of the initial RF. Criteria met for all compounds.

3/23/96
(7:32) Criteria met for all compounds except: 1,1-dichloropropane, dibromomethane, 2-chloroethyl vinyl ether, dibromochloromethane, bromoform and 1,2-dibromo-3-chloropropane. For each of these parameters, the daily RFs were higher than the initial RFs by more than 15%.

3/25/96
(13:23) Criteria met for all compounds except: ethylbenzene, isopropylbenzene and sec-butylbenzene. For each of these parameters, the daily RFs were higher than the initial RFs by more than 15%.

No qualification of the data is recommended based on the out of control continuing calibrations. Because the daily calibration response factors were higher than the initial calibration response factors and these parameters were not detected in the environmental samples, the data were considered useable for the project purposes and no further qualification was necessary.

Blanks:

No contaminants were detected in the laboratory method blanks reported for this sample batch. Results for two method blanks were reported: 3/22/96 and 3/25/96. It should be

noted that the method blank run on 3/22/96 was analyzed approximately 11 hours before the sample batch was run. A second method blank was not analyzed within the analytical batch. Therefore, method blanks were not analyzed at a frequency of 1/12 hours, as specified in the project QAPjP. Qualification of the data will not be made based on this issue alone.

Trichloroethene (TCE) was detected in the equipment blank (BP-GW-MW50504N-032096) at a concentration of 0.51 µg/L. This rinsate blank was collected immediately after decontamination procedures, which followed the collection of sample BP-GW-MW50504-032096. Following a thorough evaluation of the data, including the sequence of sample collection and analyses, and because TCE was not detected in sample BP-GW-MW50504-032096, it is the reviewer's opinion that the detection of TCE in the rinsate blank was an isolated occurrence not affecting the other data. Therefore, based on the evaluation of the blank samples, qualification of the data is not recommended.

Surrogates:

Three surrogate spikes (2-chloropropane, 1,4-dichlorobutane and aaa-trifluorotoluene) were added to each environmental sample, blank and QA sample. Control limits were established by laboratory at 75 - 125 % recovery. Criteria were met for each sample.

Matrix Spike/Matrix Spike Duplicates:

Spike and spike duplicates from two samples were reported in this data package. With the exception of 1,1-dichloroethane (1,1-DCA), the MS/MSD and RPD data for all other analytes were within the acceptable recovery and RPD control limits specified in the project QAPjP (Table 3-6). With 1,1-DCA, the MS data for both samples were outside of the acceptable recovery limits of 73 - 121%. One sample had a high recovery for the MS; the second showed a low MS recovery. Based on the MS data, a matrix interference may be suspected. Sample results will not be qualified based on the MS data alone.

Laboratory Control Sample:

Percent recoveries of 75 - 125 % were specified in QAPjP (Table 3-6) for each analyte. Criteria met.

Method Detection Limits and Target Compounds:

Method detection limits and target compounds are specified in QAPjP. Based upon the initial and continuing calibrations, it appears that two compounds co-elute on the primary column: 1,1-dichloropropene and 2-chloroethyl vinyl ether. Because the second column analysis was only a qualitative confirmation, the reported concentration should be considered to be less than or equal to the reported concentration as there is no way to attribute the co-eluting concentrations to one parameter or the other. Because there were no positive detections of these two compounds, no action is required and further qualification is not necessary.

Field Duplicates (Splits):

One field duplicate (split) was included with this sample batch. The original and its duplicate were identified as BP-GW-MW50503-032096 and BP-GW-MW50503K-032096, respectively. Analytical results were as follows:

<i>Analyte:</i>	Original Sample, (MW50503)	Duplicate Sample (MW50503K)	RPD
Carbon tetrachloride	0.78	0.58	29
Chloroform	1.5	1.3	14
1,1-DCA	0.95	0.71	29
1,2-DCA	0.97	0.80	19
1,1-DCE	24	18	29
cis-1,2-DCE	21	17	21
PCE	180	160	12
Toluene	ND<0.13*	0.17	27
1,1,1-TCA	11	8.5	26
TCE	240	200	18
Vinyl chloride	ND<0.20*	0.26	26

Notes:

All sample concentrations are shown in µg/L.

* Detection limit used for RPD calculation.

As shown in the table above, the RPD between the original sample and its duplicate ranged from 12 to 29%. In general, detections in the original sample were consistently higher than in the split sample. These concentration differences could be the result of volatilization during sample collection if the vials for the split sample were filled after the original sample vials. Because the RPDs between the laboratory MS and MSD were within allowable control limits (see MS/MSD section), it appears that the higher RPDs for the field duplicates are most likely the result of sampling variances, rather than laboratory procedures. Therefore, qualification of the data based on the field duplicate results is not recommended.

Overall Assessment of Volatile Organic Data:

There were minor quality issues with the volatile data. The affected results should be qualified as recommended in the preceding sections. All other data are considered to have completely fulfilled the project objectives.

**Inorganic Data Review
(Metals)**

(Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Zn, Ca, Mg, K, Na by EPA 6010;
As by EPA 7060; Hg by EPA 7470; and Pb by EPA 7421)

Holding Time: Samples were digested and analyzed within the method-specified holding times. Criteria met.

Calibration:

a) Initial Calibration

Raw calibration data for ICP analyses were not provided with this data package. However, the raw chromatogram data for this sample batch was provided in data package #L3232. A blank and one calibration standard was used in establishing the analytical curve for ICP, which meets method criteria.

A blank and three calibration standards were used to calibrate the GFAA system (arsenic and lead). The correlation coefficient was > 0.995. Criteria met.

A blank and five calibration standards were used to calibrate the cold vapor system (mercury). The correlation coefficient was > 0.995. Criteria met.

b) Standard Solutions (CRI, CRA):

The CRI (ICP) and CRA (GFAA and CV-Hg) solutions were analyzed in the correct sequence and at the proper frequency. Criteria met.

c) Initial Calibration Verification (ICV):

Immediately after initial calibration, the ICV solution was analyzed. Percent recoveries for each analyte were within control limits of 90 - 110% (80 - 120% for mercury). Criteria met.

d) Continuing Calibration Verification (CCV):

Calibration was verified at the beginning of the analytical run, every 10 samples, and at end of run with CCV solution. Percent recoveries for each analyte were within control limits of 90 - 110% (80 - 120% for mercury). Criteria met.

Blanks

a) Initial Calibration Blank (ICB)/Continuing Calibration Blanks (CCB):

ICB and CCB blanks were analyzed in the correct sequence and at the proper frequency. In the ICB, iron and manganese were detected at concentrations of 0.00277 and 0.00309 mg/L,

respectively. In the CCBs, the highest detectable concentration of cadmium was 0.00266 mg/L; iron and lead were also detected in one of the CCBs at concentrations of 0.00461 and 0.00469 mg/L, respectively.

Overall, there were a significant number of analyte detections in both the ICB and CCB solutions. Based on validation guidelines, the analyses should have been terminated after analyte detections in the CCB solutions. However, the laboratory did not follow this guideline. Therefore, sample results will be flagged with a "U-B" for positive sample results that are less than 5 times the highest concentration found in any of the ICB/CCB blanks.

b) Preparation Blank (PB):

As with the ICB/CCB solutions, analytes were also detected in the preparation blank. Aluminum was detected at a concentration of 0.0855 mg/L; barium at 0.00154 mg/L; iron at 0.0397 mg/L; calcium at 0.299 mg/L; magnesium at 0.144 mg/L; and, sodium at 0.217 mg/L. All positive sample detections of these analytes that are less than 10 times the respective concentrations detected in the preparation blank should be qualified as "U-B".

ICP Interference Check Sample (ICS):

An ICP ICS solution was analyzed at the proper frequency and in the correct sequence within the analytical run. Results for the ICS analyses of solution A+B fell within the control limits of 80 - 120% recovery for each of the analytes included in the ICS solution. Criteria met and no qualification is required.

LCS Analysis:

Percent recoveries for each LCS constituent fell within the required control limits of 80 - 120%. Criteria met.

Laboratory Duplicates:

The RPD between the original sample and its duplicate was less than 20%. Criteria met.

Field Duplicates:

Analyte:	Original Sample (MW50503)	Duplicate Sample (MW50503K)	RPD	Control Limits
Barium	0.0894	0.0879	2	± 20%
Chromium	0.00203	ND<0.00180*	12	± Detection limit
Iron	0.0323	0.0279	15	± 20%
Lead	ND<0.000636*	0.000920	36	± Detection limit
Manganese	0.00367	ND<0.00200*	59	± Detection limit
Zinc	0.0229	ND<0.0175*	27	± Detection limit
Calcium	55.1	52.7	5	± 20%
Magnesium	12.3	11.9	3	± 20%
Potassium	3.95	3.64	8	± 20%
Sodium	12.4	11.9	4	± 20%

Notes:

All sample concentrations are shown in mg/L.

* Detection limit used for RPD calculation.

With the exception of analytes detected at concentrations just slightly higher than their respective detection limits (i.e. chromium, lead, manganese and zinc), the relative difference between the original sample and its duplicate was within the criteria of < 20. For chromium, lead, manganese and zinc, where the detected concentrations were less than 5 times the detection limit, the control limits applied were ± the detection limit. Based on these criteria, all duplicate sample analyses meet the control limit criteria. No action is required.

Spiked Samples:

With the exception of calcium, the spike recovery for each of the analytes was within the control limits of 75 - 125%. Calcium exhibited a high spike recovery, 174%, however, the sample concentration exceeded the spike concentration by more than 4 times. Therefore, no qualification is required based on the out-of-control result.

Post-Digest Spikes (Analytical Spikes):

Post spike recoveries were within the control limits of 75 - 125% for each analyte analyzed, except for calcium, magnesium and sodium. Analytical spike recoveries for these three analytes were 460%, 176% and 134%, respectively. However, in each of these cases, the sample concentrations exceeded the spike concentrations by more than 4 times, therefore no qualification is required.

ICP Serial Dilution Results:

The percent difference between the initial sample results and the diluted sample results for each analyte was less than 10%. Criteria met.

Overall Assessment of Metals Data:

All QC data met the required project objectives, except for the blank analyses data. The affected results should be qualified as recommended in the aforementioned section. All other data are considered to have completely fulfilled the project objectives.

**Inorganic Data Review
(Anions)**

(NO₃, NO₂, Cl and SO₄ by EPA 300.0 [ion chromatography])

Validation guidelines are not provided for EPA 300.0. An evaluation of the data was performed using the project QAPjP and the method as guidelines.

Holding Time:

48-hour holding time for nitrate and nitrite. 28-day holding time for chloride and sulfate. Criteria met.

Calibration:

a) Initial Calibration:

A minimum of a blank and three initial calibration standards are required for the method. General calibration information was provided, however, chromatograms were not initially included in the data package. The laboratory was notified and raw calibration chromatograms were subsequently provided. Criteria met.

b) Initial Calibration Verification:

Recoveries for each analyte were within control limits of 90 - 110%. Criteria met.

c) Continuing calibration verification:

CCV solutions were analyzed at the proper frequency and in the correct sequence. Recoveries were within the control limits of 90 - 110%. Criteria met.

Blanks:

a) Initial calibration blank:

There were no analyte detections in the ICB at concentrations greater than the reported detection limits. Criteria met.

b) Continuing calibration blanks:

CCBs were analyzed at the proper frequency and in the correct analytical sequence. With the exception of chloride, there were no analyte detections in the CCBs at concentrations greater than the reported detection limits. Concentrations of chloride were detected in three CCB analyses at levels higher than the detection limit. It is recommended to flag all positive chloride results that are less than 5 times the maximum chloride concentration detected in the CCB (i.e., 0.525 mg/L) with a "U-B". However, all positive chloride results exceed this limit. Therefore, no qualification is required.

c) Method blank:

There were no analyte detections in the CCB at concentrations greater than the reported detection limits. CCBs were analyzed at the proper frequency and in the correct analytical sequence. Criteria met.

Laboratory Control Sample:

The LCS satisfied the recovery criteria of 90 - 110% for the four analytes.

Matrix Spike and Matrix Spike Duplicate:

Spike and spike duplicate recoveries were within the acceptable range of 80 - 120%. The RPD between the MS and MSD results met the criteria of $\leq 20\%$. Criteria met.

Field Duplicates:

The relative difference between the original sample and its duplicate was within the criteria of $\leq 20\%$. Criteria met.

Overall Assessment of Anion Data:

Based on the anion results discussed in the preceding paragraphs, no action is required and the data should be considered fully usable for the project objectives.

**Inorganic Data Review
(Miscellaneous Parameters)**

(Alkalinity by EPA 310.1, Hardness by EPA 130.2, TDS/TSS by EPA 160.1/160.2 and Radon by Draft Method 913)

Validation guidelines are not provided for these methods. An evaluation of the data was performed using the project QAPjP and the applicable methods as guidelines.

Holding Times:

Samples were analyzed within the method required holding times specified for each of the analytes. Criteria met.

Blanks:

No contaminants were detected in the method blanks for the hardness or alkalinity analyses. No action is required.

LCS:

An LCS was analyzed with the hardness and alkalinity analyses. LCS recovery for the hardness analysis was within the control limits of 90 - 110%, whereas the LCS recovery for the alkalinity analysis was slightly low (89%). Because the MS recovery data was within the acceptable range, no action is recommended for either the hardness or alkalinity results.

MS:

One sample was spiked for the alkalinity analysis. Spike recovery was within the acceptable range of 80 - 120%. No action is required.

Laboratory Duplicates:

One duplicate analyses was performed for each of the analyses: TDS, TSS, alkalinity, hardness and radon. The relative difference between the original sample and the duplicate for each of the aforementioned analyses was within the control limits of $\leq 20\%$. No action is required.

Field Duplicates:

With the exception of radon, the relative difference between the original sample and its duplicate was within the control limits of $< 20\%$. The radon concentration in the original sample was 278 pCi/L; the radon concentration in the duplicate sample was 92 pCi/L. Due to the volatility of radon, this discrepancy is most likely the result of sampling variances, rather than laboratory procedures. Qualification is not recommended.

Overall Assessment of Miscellaneous Parameter Data:

QC criteria were met for each of the miscellaneous analyses. Based on these results, no qualification is recommended and the data should be considered to have completely fulfilled the project objectives.

**DATA REVIEW
CLP-LIKE DATA PACKAGE**

Project: Baldwin Park Operable Unit Pre-Remedial Design -
Groundwater Monitoring Program

References: USEPA CLP National Functional Guidelines for Organic/Inorganic Data Review
February 1994 (EPA540/R-94/012)

SW-846 Methods, July 1992

Methods for Chemical Analysis of Water and Wastes, EPA 1983 (Method 300.0
revised August 1994 [EPA600/R-93/100])

Sampling and Analysis Plan, Baldwin Park Operable Unit Pre-Remedial Design,
Groundwater Monitoring Program, June 14, 1995

Reviewer: Barbara Wells
CDM - Irvine, California

Analytical Laboratories: Thermo Analytical
Santa Ana, CA 92705

Truesdail Laboratories, Inc. (Radon analysis only)
Tustin, CA 92680

Sample ID	Laboratory ID	Sample Type/Analysis	Date		
			Sampled	Shipped	Received by Lab
BP-GW-08000069-041296	L3292-1	Groundwater - Radon	4/12/96	4/12/96	4/12/96
	L3292-2	Groundwater - VOCs			
	L3292-3	Groundwater - Metals/Cations			
	L3292-4	Groundwater - Gen. Minerals			
BP-GW-01901598-041296	L3292-5	Groundwater - Radon	4/12/96	4/12/96	4/12/96
	L3292-6	Groundwater - VOCs			
	L3292-7	Groundwater - Metals/Cations			
	L3292-8	Groundwater - Gen. Minerals			
BP-GW-08000095-041296	L3292-9	Groundwater - Radon	4/12/96	4/12/96	4/12/96
	L3292-10	Groundwater - VOCs			
	L3292-11	Groundwater - Metals/Cations			
	L3292-12	Groundwater - Gen. Minerals			
BP-GW-08000095(F)-041296	L3292-13	Field Blank - VOCs	4/12/96	4/12/96	4/12/96
BP-GW-08000095(P)-041296	L3292-14	PE Standard - VOCs	4/12/96	4/12/96	4/12/96
	L3292-15	PE Standard - Metals			
	L3292-16	PE Standard - Gen. Minerals			
	L3292-17	PE Standard - Gen. Minerals			

Analyses Required (Non-CLP Methods):

L3292-1 through L3292-17

VOCs by EPA 8021

Metals & Cations:

Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Zn, Ca, Mg, K, Na by EPA 6010

As by EPA 7060

Hg by EPA 7470

Pb by EPA 7421

Nitrate, Nitrite, Sulfate and Chloride by EPA 300.0

Alkalinity (HCO₃ & CO₃) by EPA 310.1

TDS/TSS by EPA 160.1/160.2

Hardness by EPA 130.2

Radon by Draft Method 913

Holding Times:

Analyte	Method	Holding Time	Date			Holding Time OK? (Y/N)
			Sampled	Digested	Analyzed	
VOCs	8021	14 days	4/12/96	na	4/18/96	Y
Metals (except Mercury), Cations	6000/7000	6 months	4/12/96	4/15-17/96	4/16-25/96	Y
Mercury	7470	28 days	4/12/96	4/15-17/96	4/16-25/96	Y
NO ₃ , NO ₂	300.0	48 hours	4/12/96	na	4/12/96	Y
Cl, SO ₄	300.0	28 days	4/12/96	na	4/12/96	Y
Alkalinity	310.1	14 days	4/12/96	na	4/16/96	Y
TDS/TSS	160.1/ 160.2	7 days	4/12/96	na	4/15-16/96	Y
Hardness	130.2	6 months	4/12/96	na	4/15/96	Y
Radon ²²²	913 (Draft)	24 hours	4/12/96	na	4/12/96	Y

**Volatile Organic Data Review
(EPA Method 8021)**

Holding Time: 14 day holding time for preserved samples. Criteria met.

Initial Calibration:

Minimum 5-point calibration curve. Percent RSD criteria of less than 20% met for all compounds.

For propylbenzene, there is no response factor reported for the 2.5 ng (0.5 ppb) initial calibration standard on the primary column for the PID. This indicates that detection limits reported for this parameter at less than 0.5 µg/L should be qualified as "UJ".

Continuing Calibration:

4/18/96 Criteria met for all compounds. Daily RFs were within 15% from initial RFs.
(12:54)

4/18/96 Criteria met for all compounds except: dichlorodifluoromethane, vinyl
(22:32) chloride, bromomethane, trichlorofluoromethane, 1,1-dichloropropene, dibromomethane, 2-chloroethyl vinyl ether, dibromochloromethane, bromoform and 1,2-dibromo-3-chloropropane. For each of these parameters, the daily RFs were higher than the initial RFs by more than 15%.

No qualification of the data is recommended based on the out of control continuing calibrations. Because the daily calibration response factors were higher than the initial calibration response factors and these parameters were not detected in the environmental samples, the data were considered useable for the project purposes and no further qualification was necessary.

Blanks:

No contaminants were detected in the laboratory method blank. However, methylene chloride was detected in the field blank at a concentration of 0.55 µg/L. Methylene chloride was detected in four of the samples (BP-GW-08000069-041296, BP-GW-01901598-041296, BP-GW-08000095-041296, and BP-GW-08000095(P)-041296) at concentrations greater than the method detection limit and less than 5 times the concentration detected in the field blank. Therefore, the detection limit of methylene chloride should be elevated to the concentration detected in each of these samples and qualify the results with a "UJ-B". No further qualification is necessary based on blank results.

Surrogates:

Three surrogate spikes (2-chloropropane, 1,4-dichlorobutane and aaa-trifluorotoluene) were added to each environmental sample, blank and QA sample. Control limits were established by laboratory at 75 - 125 % recovery. Criteria were met for each sample.

Matrix Spike/Matrix Spike Duplicates:

Project QAPjP (Table 3-6) specified control limits for spike recoveries and for RPD between MS and MSD. Criteria met.

Laboratory Control Sample:

Percent recoveries of 75 - 125 % were specified in QAPjP (Table 3-6) for each analyte. Criteria met.

Method Detection Limits and Target Compounds:

Method detection limits and target compounds are specified in QAPjP. Based upon the initial and continuing calibrations, it appears that two compounds co-elute on the primary column: 1,1-dichloropropene and 2-chloroethyl vinyl ether. Because the second column analysis was only a qualitative confirmation, the reported concentration should be considered to be less than or equal to the reported concentration as there is no way to attribute the co-eluting concentrations to one parameter or the other. Because there were no positive detections of these two compounds, no action is required and further qualification is not necessary.

Field Duplicates: No split samples were included with this sample batch.

System Performance:

One performance evaluation (PE) standard was included with this sample batch. The PE sample was purchased from Environmental Resource Associates of Arvada, Colorado, and spiked for five target compounds (carbon tetrachloride, 1,2-dichloroethane, cis-1,2-dichloroethene, tetrachloroethene and trichloroethene) at relatively high concentrations (certified values ranging from 131 to 225 µg/L). Percent recoveries for each of these compounds were within the acceptable performance limits of 80 - 120% (specified by ERA). However, three compounds (chloroform, methylene chloride and trans-1,2-dichloroethene) were also detected in the sample that had not been spiked in the PE standard.

Methylene chloride results detected in the environmental samples were previously qualified based on field blank detections. Trans-1,2-dichloroethene was not detected in any of the samples, therefore qualification of this compound is not necessary. Chloroform was detected in one of the samples submitted in the sample batch. Based on the PE results, the positive detection of chloroform should be qualified with a "J".

Overall Assessment of Volatile Organic Data:

There were minor quality issues with the volatile data. The affected results should be qualified as recommended in the preceding sections. All other data are considered to have completely fulfilled the project objectives.

**Inorganic Data Review
(Metals)**

(Al, Ba, Cd, Cr, Cu, Fe, Mn, Ni, Zn, Ca, Mg, K, Na by EPA 6010;
As by EPA 7060; Hg by EPA 7470; and Pb by EPA 7421)

Holding Time: Samples were digested and analyzed within the method-specified holding times. Criteria met.

Calibration:

a) Initial Calibration

Raw calibration data for ICP analyses were not provided with initial package. Subsequently, requested data from laboratory and received them within one day. A blank and one calibration standard was used in establishing the analytical curve for ICP, which meets method criteria.

A blank and three calibration standards were used to calibrate the GFAA system (arsenic and lead). The correlation coefficient was > 0.995. Criteria met.

A blank and five calibration standards were used to calibrate the cold vapor system (mercury). The correlation coefficient was > 0.995. Criteria met.

b) Standard Solutions (CRI, CRA):

The CRI (ICP) and CRA (GFAA and CV-Hg) solutions were analyzed in the correct sequence and at the proper frequency. Criteria met.

c) Initial Calibration Verification (ICV):

Immediately after initial calibration, the ICV solution was analyzed. Percent recoveries for each analyte were within control limits of 90 - 110% (80 - 120% for mercury). Criteria met.

d) Continuing Calibration Verification (CCV):

Calibration was verified at the beginning of the analytical run, every 10 samples, and at end of run with CCV solution. Percent recoveries for each analyte were within control limits of 90 - 110% (80 - 120% for mercury). Criteria met.

Blanks

a) Initial Calibration Blank (ICB)/Continuing Calibration Blanks (CCB):

ICB and CCB blanks were analyzed in the correct sequence and at the proper frequency. Barium was detected at a concentration of 0.00182 mg/l and magnesium was detected at 0.0424 mg/l in the ICB solution. Therefore, positive detections for each of these analytes in

the environmental samples that are less than 5 times the blank concentration should be qualified as "U-B".

Metals were not detected in any of the CCB solutions. No further qualification based on CCB results is required.

b) Preparation Blank (PB):

Lead was detected in the PB at a concentration of 0.001 mg/l; calcium at a concentration of 0.250 mg/l; magnesium at a concentration of 0.260 mg/l; and sodium at a concentration of 0.112 mg/l. All detections of these analytes in the samples that are less than 10 times the respective concentrations detected in the PB should be qualified as "U-B".

ICP Interference Check Sample (ICS):

An ICP ICS solution was analyzed at the proper frequency and in the correct sequence within the analytical run. Results for the ICS analyses of solution A+B fell within the control limits of 80 - 120% recovery for each of the analytes included in the ICS solution. Criteria met and no qualification is required.

LCS Analysis:

Percent recoveries for each LCS constituent fell within the required control limits of 80 - 120%. Criteria met.

Laboratory Duplicates:

The RPD between the original sample and its duplicate was less than 20%. Criteria met.

Spiked Samples:

With the exception of calcium, the spike recovery for each of the analytes was within the control limits of 75 - 125%. Calcium exhibited a low spike recovery, 10%, however, the sample concentration exceeded the spike concentration by more than 4 times. Therefore, no qualification is required based on the out-of-control result.

Post-Digest Spikes (Analytical Spikes):

Post spike recoveries were within the control limits of 75 - 125% for each analyte analyzed, except for magnesium. Although a post-digestion spike was not required for magnesium, the laboratory reported the recovery for magnesium at 155%. The sample concentration for magnesium exceeded the spike concentration by more than 4 times, therefore no qualification is required.

ICP Serial Dilution Results:

With the exception of potassium, the percent difference between the initial sample result and the diluted sample result for each analyte was less than 10%. For potassium, the diluted sample results differed from the original determination by 14%. Therefore, it is recommended to flag all positive potassium results with "J-E", based on the serial dilution result. Qualification of other analytes is not required.

System Performance:

One PE standard was included with this sample batch. The PE sample was purchased from ERA and spiked for trace metals. Analysis of the PE standard indicated that concentrations of two metals did not fall within the acceptable performance limits: aluminum and chromium. In the case of aluminum, the PE was spiked at a concentration of 0.229 mg/l. The laboratory reported a non-detectable concentration of aluminum (less than 0.0437). Chromium was spiked in the PE sample at a concentration of 0.241 mg/l. The laboratory reported the chromium concentration at 0.334 mg/l, which corresponds to a recovery of 139%. This exceeds the allowable recovery control limits of 82 - 118% (75 - 118% for mercury and arsenic, specified by ERA). All other analyte concentrations were within the acceptable performance limits.

Based on the PE results, aluminum results should be flagged with a "J" or a "UJ"; positive chromium results should be flagged with a "J".

Overall Assessment of Metals Data:

There were a few minor quality issues with the metals data. The affected results should be qualified as recommended in the preceding sections. All other data are considered to have completely fulfilled the project objectives.

**Inorganic Data Review
(Anions)**

(NO₃, NO₂, Cl and SO₄ by EPA 300.0 [ion chromatography])

Validation guidelines are not provided for EPA 300.0. An evaluation of the data was performed using the project QAPjP and the method as guidelines.

Holding Time:

48-hour holding time for nitrate and nitrite. 28-day holding time for chloride and sulfate. Criteria met.

Calibration:

a) Initial Calibration:

A minimum of a blank and three initial calibration standards are required for the method. Calibration information was provided, however, chromatograms for only the mid-level standard were initially provided. Subsequent information provided by the laboratory confirmed that a blank and three calibration standards were used for each anion. Therefore, no qualification of these data are required. Criteria met.

b) Initial Calibration Verification:

Initial calibration was verified for nitrate, nitrite and sulfate. Recoveries were within control limits of 90 - 110%. The chloride concentration in the ICV solution was greater than the top end of the calibration curve. There is no evidence of the solution being diluted to bring chloride within the linear range of the calibration curve. However, the ICV solution was subsequently diluted and analyzed at a later position (18 samples later). The chloride results of the diluted ICV solution were within 90 - 110%. Although the dilution should have been performed and analyzed earlier in the analytical run, the chloride results will not be flagged based on this issue alone. Therefore, no qualification of the chloride, nitrate, nitrite or sulfate is recommended based on the ICV results.

c) Continuing calibration verification:

CCV solutions were analyzed at the proper frequency and in the correct sequence. Recoveries were within the control limits of 90 - 110%. Criteria met.

Blanks:

a) Initial calibration blank:

There were no analyte detections in the ICB at concentrations greater than the reported detection limits. Criteria met.

b) Continuing calibration blanks:

There were no analyte detections in the CCB at concentrations greater than the reported detection limits. CCBs were analyzed at the proper frequency and in the correct analytical sequence. Criteria met.

c) Method blank:

There were no analyte detections in the method blank at concentrations greater than the reported detection limits. Method blanks were analyzed at the proper frequency and in the correct analytical sequence. Criteria met.

Laboratory Control Sample:

The LCS satisfied the recovery criteria of 90 - 110% for the four analytes.

Matrix Spike and Matrix Spike Duplicate:

An MS and MSD were analyzed with the batch of samples. Results of the MS/MSD analyses indicate that chloride, nitrite and sulfate spike and spike duplicate recoveries were within the acceptable range of 80 - 120%. The spike and spike duplicate recoveries for nitrate were 78 and 77%, respectively, which is slightly lower than the acceptable recovery range. Based on these results, a matrix effect may be suspected. However, the LCS recovery for nitrate was within range.

With the exception of chloride, the RPD between the MS and the MSD meet the criteria of less than 20%. The RPD for chloride was reported at 33%. The RPD between the LCS and its duplicate was 0%. Based on these data, no action is recommended and qualification is not required.

System Performance:

One PE standard was included with this sample batch. The PE sample was purchased from ERA and spiked for chloride and sulfate. The PE sample was not spiked for nitrate and nitrite due to their short holding times. Analysis of the PE standard indicated that the reported value for chloride (140 mg/l) was within the control limits of 91 - 106% (specified by ERA); however the recovery for sulfate, 76%, was below the acceptable performance range of 86 - 114%.

Based on the PE results, it is recommended to flag the sulfate results with a "J". No action is recommended for chloride, nitrate or nitrite.

Overall Assessment of Anion Data:

Based on this review, it is recommended that sulfate results in this data package be qualified as estimated values and flagged with a "J".

**Inorganic Data Review
(Miscellaneous Parameters)**

(Alkalinity by EPA 310.1, Hardness by EPA 130.2, TDS/TSS by EPA 160.1/160.2 and Radon by Draft Method 913)

Validation guidelines are not provided for these methods. An evaluation of the data was performed using the project QAPjP and the applicable methods as guidelines.

Holding Times:

Samples were analyzed within the method required holding times specified for each of the analytes. Criteria met.

Blanks:

No contaminants were detected in the method blanks for the hardness or alkalinity analyses. No action is required.

LCS:

An LCS was analyzed with the hardness and alkalinity analyses. LCS recovery for each of the methods was within the control limit of 90 - 110%. No action is required.

MS:

One sample was spiked for the alkalinity analysis. Spike recovery was within the acceptable range of 80 - 120%. No action is required.

Laboratory Duplicates:

One duplicate analyses was performed for each of the analyses: TDS, TSS, alkalinity, hardness and radon. The relative difference between the original sample and the duplicate for each of the aforementioned analyses was within the control limits of $\pm 20\%$. No action is required.

System Performance:

One PE standard was included with this sample batch. The PE sample was purchased from ERA and spiked for hardness, alkalinity (as CaCO_3), TDS and TSS. Analysis of the PE standard indicated that the reported values for alkalinity and TDS were within the acceptable performance limits. However, the values determined for TSS and hardness were not within the acceptance limits. For TSS, the certified value was 109 mg/l; the laboratory reported ND less than 10 mg/l. For total hardness (as CaCO_3), the certified value was 278 mg/l; the laboratory reported a concentration of 12 mg/l.

Based on the PE results, it is recommended to flag the hardness and TSS results as "J" or "UJ".

Overall Assessment of Miscellaneous Parameter Data:

Based on the results of the PE standard, the TSS and hardness data should be considered estimated values and flagged with "J" or "UJ". All other data are considered to have completely fulfilled the project objectives.

Baldwin Park Operable Unit

Summary of Groundwater Analytical Results MW5-18

Well ID		MW51803	MW51802	MW51801	MW51803N
Sample Depth (feet bgs)		500 - 510	630 - 640	780 - 790	--
Sample Date		3-Jun-96	3-Jun-96	3-Jun-96	3-Jun-96
Sample Type ¹		GW	GW	GW	N
EPA Method 8021 ²	MCL ³				
Benzene	1	0.21	ND<0.090	ND<0.090	ND<0.090
Carbon tetrachloride	0.5	1.0	1.0	1.6	ND<0.28
Chlorobenzene	70	ND<0.14	ND<0.14	ND<0.14	ND<0.14
Chloroform	100 ^b	3.6	0.77	0.33	ND<0.24
1,1-Dichloroethane	5	0.86	0.19	ND<0.19	ND<0.19
1,2-Dichloroethane	0.5	0.89	ND<0.22	ND<0.22	ND<0.22
1,1-Dichloroethene	6	16	5.2	0.27	ND<0.21
cis-1,2-Dichloroethene	6	12	5.8	0.43	ND<0.17
trans-1,2-Dichloroethene	10	ND<0.17	ND<0.17	ND<0.17	ND<0.17
Methylene chloride	40 ^a	0.51 B	ND<0.29	ND<0.29	ND<0.29
1,1,1,2-Tetrachloroethane	--	ND<0.21	ND<0.21	ND<0.21	ND<0.21
Tetrachloroethene	5	240	240	15	ND<0.29
Toluene	150	ND<0.13	ND<0.13	ND<0.13	ND<0.13
1,1,1-Trichloroethane	200	3.2	1.1	ND<0.26	ND<0.26
1,1,2-Trichloroethane	5	ND<0.27	ND<0.27	ND<0.27	ND<0.27
Trichloroethene	5	280	320	18	ND<0.22

Notes:

All concentrations for EPA method 8021 are in µg/l.

¹ Sample Type:

GW = Groundwater sample

K = Duplicate (split) sample

N = Equipment decontamination blank

² Only compounds detected in one or more samples are listed.

ND = Not detected at a concentration greater than the limit indicated.

bgs = below ground surface

³ California Maximum Contaminant Level (as of 12/95)

^a California Action Level

^b Federal MCL

-- No Standard

B = Also detected in laboratory's method blank



ENVIRONMENTAL
RESOURCE ASSOCIATES
ARVADA, COLORADO 1-800-372-0122

Certification

Camp Dresser & McKee Inc.

Quality Control Standards

Catalog NO 093

Lot NO 0329-96-01

Parameter

Certified Value

Performance
Acceptance Limits™
(µg/L)

Carbon Tetrachloride	211	154-266
1,2-Dichloroethane	169	130-211
cis-1,2-Dichloroethylene	225	138-308
Tetrachloroethylene	186	137-227
Trichloroethylene	131	97.5-159

Standard Preparation Instructions: None required; standard is ready for preparation and/or analysis as received.

Preservative: HCl.

Storage: Store at 4°C.

Performance Acceptance Limits (PALs™) are listed as guidelines for acceptable analytical results given the limitations of the USEPA methodologies commonly used to determine these parameters and closely approximate the 95% confidence interval. The PALs™ are based on analytical verification data generated by ERA, independent referee laboratory results and data from USEPA methods, WP, WS and CLP interlaboratory studies. If your result falls outside of the PAL™, ERA recommends that you investigate potential sources of error in your preparation and/or analytical procedures. For further technical assistance, call ERA at 1-800-372-0122.

Prepared By: MFB

Reviewed By: JLC

Date: 4/10/96

Date: 4/10/96

Custom Standard



ENVIRONMENTAL
RESOURCE ASSOCIATES
ARVADA, COLORADO 1-800-372-0122

Certification

WasteWatR™

Quality Control Standards

Catalog No **WW-11**

Lot No **9970**

Parameter	Certified Value		Performance Acceptance Limits™	
MINERALS WasteWatR™ (Catalog No. 506)	mg/l		mg/l	
total solids at 105°C	913		794 - 1030	
total dissolved solids at 180°C	913		794 - 1030	
conductivity at 25°C	1220	umhos	1040 - 1400	umhos
alkalinity as CaCO ₃	180		160 - 200	
chloride	138		128 - 148	
fluoride	10.6		9.01 - 12.2	
sulfate	124		107 - 141	
potassium	123		105 - 141	
sodium	173		147 - 199	
pH	9.09	S.U.	8.89 - 9.29	S.U.
HARDNESS WasteWatR™ (Catalog No. 507)	mg/l		mg/l	
total suspended solids	109		92.7 - 125	
calcium	60.6		52.1 - 69.1	
magnesium	30.8		26.5 - 35.1	
calcium hardness as CaCO ₃	151		130 - 172	
total hardness as CaCO ₃	278		239 - 317	
GREASE & OIL WasteWatR™ (Catalog No. 504)				
grease & oil (gravimetric)	55.0	mg/bttl	33.0 - 68.8	mg/bttl
grease & oil (infrared)	66.0	mg/bttl	39.6 - 82.5	mg/bttl
TRACE METALS WasteWatR™ (Catalog No. 500)	µg/l		µg/l	
aluminum	229		188 - 270	
antimony	64.7		48.5 - 80.9	
arsenic	76.5		57.4 - 90.3	
barium	388		318 - 458	
beryllium	124		102 - 146	
boron	283		232 - 354	
cadmium	95.9		78.6 - 113	
chromium	241		198 - 284	
cobalt	212		174 - 250	
copper	118		96.8 - 139	
iron	471		386 - 556	
lead	132		108 - 156	
manganese	188		154 - 222	
mercury	10.6		7.95 - 13.3	
molybdenum	129		106 - 152	
nickel	406		333 - 479	
selenium	97.1		72.8 - 115	
silver	61.8		50.7 - 72.9	
strontium	207		170 - 244	
thallium	64.7		48.5 - 80.9	
vanadium	189		155 - 223	
zinc	221		181 - 261	

continued on back

WasteWatR™ Lot No. 9970

DATA VALIDATION FOR: Halogenated and Aromatic Volatile
Compounds using SW-846 Method 8021

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial
Design Program

SDG NO: L3547

CONTRACT LAB: Thermo Analytical, Santa Ana, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: October 4, 1996

MATRIX: Water

Data validation was performed following the guidelines in *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, 3rd Edition* (SW-846) dated January 1990 with current revisions and the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, November 1988* with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Two facts should be noted by all data users. First, the "R" qualifier means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. Results qualified with an "R" should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Eight water samples (listed below) were collected at wells MW5-18 and MW5-15 in the Baldwin Park Operable Unit on July 9, 1996 and shipped to Thermo Analytical. These samples were analyzed for halogenated and aromatic volatile compounds using SW-846 Method 8021.

BP-GW-MW51801-070996
BP-GW-MW51802-070996
BP-GW-MW51803-070996
BP-GW-MW51501-070996
BP-GW-MW51502-070996
BP-GW-MW51502N-070996 (EQUIPMENT RINSATE BLANK)
BP-GW-MW51503-070996
BP-GW-MW51503K-070996 (DUPLICATE SAMPLE)

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding times are grossly exceeded).

The samples were analyzed within prescribed holding times.

II. GC/MS INSTRUMENT PERFORMANCE CHECK

Not applicable.

III. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

The response factor measures the instrument's response to specific chemical compounds. The response factor must be ≥ 0.05 in both the initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). If the mean response factor (RRF) of the initial calibration or the continuing calibration is < 0.05 for any analyte, those analytes detected in the associated samples may be qualified as estimated, "J". The results for all analytes that were not detected may be rejected, "R".

Percent relative standard deviation (%RSD) is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent difference (%D) compares the response factor of the continuing calibration check to the RRF from the initial calibration. %D is a measure of the instrument's daily performance. %RSD must be $< 30\%$ and %D must be $< 25\%$. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, the positive results for samples associated with an %RSD or %D that was above the acceptable limits may be qualified as estimated, "J", and the results for the analytes not detected may be qualified as non-detects with estimated detection limits, "UJ". Non-detects may be used without any qualification if %RSD is > 30 based on professional judgement. If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified as unusable, "R".

IIIA. INITIAL CALIBRATION

All listed RRFs were ≥ 0.05 . The values listed as RRFs may be area counts; data were not present to verify the RRF values. All %RSDs were $< 30\%$ except the following:

DATE	CRITERIA OUTSIDE OF LIMITS	COMPOUND	VALUE OF CRITERIA	SAMPLE(S) AFFECTED
7/12/96	%RSD	Dibromomethane	49	None
		Dibromochloromethane	55	None
		1,2-Dibromo-3-chloropropane	52	None
		1,2-Dibromoethane	57	None
		Bromoform	62	None

This initial calibration dated 7/12/96 is associated with the diluted analyses only. The compounds with criteria outside of the acceptable limits were not detected in the undiluted sample and, therefore, the diluted results were not reported. No results were qualified.

IIIB. CONTINUING CALIBRATION

All listed RRFs were ≥ 0.05 . The values listed as RRFs may be area counts; data were not present to verify the RRF values. All %Ds were $< 25\%$ except the following:

DATE	TIME	CRITERIA OUTSIDE OF LIMITS	COMPOUND	VALUE OF CRITERIA	SAMPLE(S) AFFECTED
7/10/96	2:23PM	%D	Chloromethane	42	None
7/11/96	2:16AM	%D	Chloromethane	51	BP-GW-MW51501-070996 BP-GW-MW51502-070996 BP-GW-MW51502N-070996 BP-GW-MW51503-070996 BP-GW-MW51503K-070996
7/11/96	3:22PM	%D	Chloromethane	46	None
7/12/96	9:58PM	%D	Chloromethane Dibromomethane 1,2-Dibromo-3-chloropropane 1,2-Dibromoethane Bromoform	31 51 28 60 30	None

Due to the 7/11/96 calibration deficiencies, the chloromethane results for samples BP-GW-MW51501-070996, BP-GW-MW51502-070996, BP-GW-MW51502N-070996, BP-GW-MW51503-070996, and BP-GW-MW51503K-070996 were qualified as non-detects with estimated detection limits, "UJ".

IV. BLANK CONTAMINATION:

Quality assurance (QA)/QC blank samples, i.e., method, trip, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation, shipping, or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and equipment rinsate blanks measure cross-contamination of samples during field procedures. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample (10 times for the common contaminants), the sample result may be qualified as non-detect, "U".

IVA. METHOD BLANKS

No analytes were detected in any of the method blanks.

IVB. TRIP BLANKS

A trip blank was not analyzed with this sample group.

IVC. EQUIPMENT RINSATE BLANKS

The following analytes were detected in the equipment rinsate blank, BP-GW-MW-51502N-070996:

MATRIX	COMPOUND	CONCENTRATION (µg/L)	ACTION LEVEL (µg/L)	SAMPLE(S) AFFECTED
Water	Toluene	0.15	0.75	BP-GW-MW51502-070996 BP-GW-MW51503K-070996

Due to the equipment rinsate blank contamination, the toluene results for samples BP-GW-MW51502-070996 and BP-GW-MW51503K-070996 were qualified as non-detects, "U".

V. SURROGATES/SYSTEM MONITORING COMPOUNDS

All samples are spiked with surrogate/system monitoring compounds (SMC) compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured percent recovery (%R) of a surrogate/SMC was outside criteria, the results of that sample may be qualified as estimated, "J" or non-detects with estimated detection limits, "UJ".

2-Chloropropane, 1,4-dichlorobutane, and a,a,a-trifluorotoluene were added to each sample as surrogates. All %Rs were within the acceptable control limits.

VI. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

Matrix spike/matrix spike duplicate (MS/MSD) data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD results may be used in conjunction with other QC criteria for some additional qualification of data.

All %Rs and RPDs were within the acceptable ranges.

VII. LABORATORY CONTROL SAMPLES

Laboratory control sample (LCS) data are generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in for some qualification of data.

All %Rs and RPDs were within the acceptable ranges.

VIII. REGIONAL QUALITY ASSURANCE AND QUALITY CONTROL

Sample BP-GW-MW51503K-070996 was collected as a field duplicate sample of BP-GW-MW51503-070996. The following analytes were detected in at least one of the samples:

COMPOUND	SAMPLE CONC. ($\mu\text{g/L}$)	DUP. CONC. ($\mu\text{g/L}$)	RPD	SAMPLE(S) AFFECTED
1,1-Dichloroethene	5.8	5.2	4	None
1,1-Dichloroethane	0.57	0.5	49	None
cis-1,2-Dichloroethene	13	11	3	None
Chloroform	1.0	0.93	15	None
Carbon Tetrachloride	0.33	0.33	0	None
Trichloroethene	61	60	0	None
Tetrachloroethene	17	15	2	None
Toluene	0.11U	0.18	NC	None
O-Xylene	0.11U	0.12	NC	None
Styrene	0.11U	0.11	NC	None

NC = Not Calculated.

One RPD was above the acceptable criteria ($\pm 35\%$) and three analytes were detected in only one of the samples. Based on professional judgement, the associated results were not qualified because the detected results were near the quantitation limit.

IX. INTERNAL STANDARDS

Internal Standard (IS) performance criteria ensure that the gas chromatograph (GC) sensitivity and response are stable during every experimental run. The IS area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the IS must not vary more than ± 30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to -100%) range of the associated standard, the positive results for compounds quantitated using that IS may be qualified as estimated, "J", and the non-detects may be qualified as non-detects with estimated detection limits, "UJ". Non-detects may be qualified as "R" if there is a severe loss of sensitivity ($< 25\%$ of associated IS area counts).

Internal Standards were not analyzed and, therefore, no assessment was made.

X. COMPOUND IDENTIFICATION

Target compound list (TCL) compounds are identified on the GC by using the analyte's relative retention time (RRT). For the results to be a positively identified, the sample peak must be within ± 0.06 RRT units of the standard compound.

All RRTs were within ± 0.06 units of the standard compounds.

XI. COMPOUND QUANTITATION AND REPORTED CONTRACT-REQUIRED QUANTITATION LIMITS

ISS were not analyzed and, therefore, calculations could not be verified. Non-detect results were not reported for the diluted samples and, therefore, contract-required quantitation limit (CRQL) adjustment for dilution could not be

verified.

XII. TENTATIVELY IDENTIFIED COMPOUNDS

Not Applicable.

XIII. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The system performance was acceptable. A summary of the overall assessment of the data is provided on the next page.

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU LABORATORY Thermo Analytical

SDG NO. L3547 DATA USER CDM

REVIEW COMPLETION DATE 10/04/96

NO. OF SAMPLES 8 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
2. GC/MS INSTRUMENT PERF.	<u>O/NA</u>	<u> </u>	<u> </u>	<u> </u>
3A. INITIAL CALIBRATIONS	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
3B. CONTINUING CALIBRATIONS	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
4. BLANKS	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
5. SURROGATES	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
6. MS/MSD	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
7. LCS/LCSD	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
8. REGIONAL QC	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
9. INTERNAL STANDARDS	<u>ND</u>	<u> </u>	<u> </u>	<u> </u>
10. COMPOUND IDENTIFICATION	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
12. COMPOUND QUANTITATION	<u>ND</u>	<u> </u>	<u> </u>	<u> </u>
13. SYSTEM PERFORMANCE	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
14. OVERALL ASSESSMENT	<u>O</u>	<u> </u>	<u> </u>	<u> </u>

O = No problems or minor problems that do not affect data usability.

X = No more than about 5% of the data points are qualified as either estimated or unusable.

NA = Not applicable.

ND = No data available.

DATA VALIDATION FOR: Nitrate/Nitrite using EPA Method 300.0
PROJECT CONTACT: Suzanne Rowe
SITE: Baldwin Park
SDG NO: L3547
CONTRACT LAB: Thermo Analytical, Santa Ana, California
REVIEWER: Krista Lippoldt, CDM Federal
DATE REVIEW COMPLETED: October 10, 1996
MATRIX: Water

Data validation was performed following the guidelines in *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983 with current revisions and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, November 1988 with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detect), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Four water samples (listed below) were collected from well MW5-15 in the Baldwin Park Operable Unit on July 9, 1996 and shipped to Thermo Analytical. These samples were analyzed for nitrate and nitrite using EPA Method 300.0

BP-GW-MW51501-070996
BP-GW-MW51502-070996
BP-GW-MW51503-070996
BP-GW-MW51503K-070996 (DUPLICATE SAMPLE)

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding times are grossly exceeded).

The samples were analyzed within prescribed holding times.

II. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

For EPA Method 300.0, the instrument must be calibrated daily using a minimum of a blank and three standards. An initial calibration verification (ICV) is required immediately after daily calibration and a continuing calibration verification (CCV) is required at a frequency of 10 percent (%) and at the end of the an analytical run, whichever is more frequent. The ICV response or retention time of each analyte must agree with the expected value by ± 10 percent. The % R of the CCV must be within 90 to 100 percent. If the response is outside of the acceptable range, the result of that analyte in the associated sample(s) may be qualified as estimated, "J", non-detect with an estimated detection limit, "UJ", or unusable, "R".

IIA. INITIAL CALIBRATION

An initial calibration was performed with a blank and three standards. ICV responses for nitrate was within 10 percent of the true value. ICV response for nitrite was 83 percent, which is lower than the method specified limit of 90-110 percent; however, the nitrite recovery was within the acceptance limits provided by an independent source of the ICV. Because the CCVs were within acceptable limits, and the ICV was within a range considered acceptable by the ICV source, it is the reviewer's professional judgement that the nitrite data should not be qualified.

IIB. CONTINUING CALIBRATION

CCVs were analyzed at the appropriate frequency and in the correct analytical sequence. Percent recovery for nitrate and nitrite were within acceptable limits of 90 to 110 percent.

III. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., method, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method

blanks measure laboratory contamination. Field and equipment rinsate blanks measure cross-contamination of samples during field procedures. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample, the sample result may be qualified as non-detect, "U".

IIIA. METHOD BLANKS

Neither nitrate or nitrite were detected in the method blank.

IIIB. FIELD BLANKS

A field blank was not analyzed for nitrate or nitrite.

IIIC. EQUIPMENT RINSATE BLANKS

An equipment rinsate blank was not analyzed for nitrate or nitrite.

IV. LABORATORY CONTROL SAMPLES

The laboratory control sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All aqueous LCS %Rs must be within 80-120% and all RPDs must be within 0-20%. If the %Rs or RPDs do not fall within the acceptable limits, sample results may be qualified.

All %Rs and RPDs were within the acceptable limits.

V. DUPLICATE SAMPLE ANALYSIS

Laboratory duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Laboratory duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. If the RPDs of the laboratory duplicate analyses are not within $\pm 20\%$ (35% for soils) for results ≥ 5 times the contract-required detection limit (5xCRDL) or ± 1 xCRDL (2xCRDL for soils) for results < 5 xCRDL, the associated results may be qualified.

No data were provided for laboratory duplicate analyses.

VI. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. If the %Rs of the spiked sample (matrix spike [MS]) do not fall between 75-125% or the RPDs of the duplicate results do not fall between $\pm 20\%$, the associated sample results may be qualified and a post-digestion spiked sample (PDS) is required for all analytes. The acceptable control limits for the PDS %Rs is also 75-125%, but the data from the PDS is not used to qualify data.

All %Rs and RPDs were within the acceptable control limits.

VII. FIELD DUPLICATES

Field duplicate samples may be collected and analyzed as an indication of overall

precision. These analyses measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance. If the RPDs of the field duplicate analyses are not within $\pm 30\%$ (50% for soils) for results $\geq 5 \times \text{CRDL}$ or $\pm 1 \times \text{CRDL}$ ($2 \times \text{CRDL}$ for soils) for results $< 5 \times \text{CRDL}$, the associated results may be qualified.

Sample BP-GW-MW51503K-070996 was collected as the duplicate of sample BP-GW-51503K-070996. The following analytes were detected in at least one of the samples:

COMPOUND	CRDL (mg/L)	5xCRDL (mg/L)	SAMPLE CONC (mg/L)	DUP CONC (mg/L)	QC CONTROL LIMITS	SAMPLE(S) AFFECTED
Nitrate	0.25	1.25	2.6	2.6	RPD=0	None

All field duplicate results met criteria.

VIII. OVERALL ASSESSMENT

A summary of the overall assessment of the data is provided on the following page.

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU LABORATORY Thermo Analytical

SDG NO. L3547 DATA USER CDM

REVIEW COMPLETION DATE 10/10/96

NO. OF SAMPLES 4 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	METALS	WET CHEMISTRY
1. HOLDING TIMES	<u> </u>	<u>O</u>
2A. INITIAL CALIBRATIONS	<u> </u>	<u>O</u>
2B. CONTINUING CALIBRATIONS	<u> </u>	<u>O</u>
3A. LAB BLANKS	<u> </u>	<u>O</u>
3B. FIELD BLANKS	<u> </u>	<u>ND</u>
3C. RINSATE BLANKS	<u> </u>	<u>ND</u>
4. INTERFERENCE CHECK SAMPLE	<u> </u>	<u>NA</u>
5. LCS	<u> </u>	<u>O</u>
6. LAB DUPLICATE	<u> </u>	<u>ND</u>
7. SPIKE SAMPLES	<u> </u>	<u>O</u>
8. GFAA QC	<u> </u>	<u>NA</u>
9. ICP SERIAL DILUTION	<u> </u>	<u>NA</u>
10. FIELD DUPLICATES	<u> </u>	<u>O</u>
11. OVERALL ASSESSMENT	<u> </u>	<u>O</u>

O = No problems or minor problems that do not affect data usability.

X = No more than about 5% of the data points are qualified as either estimated or unusable.

NA = Not applicable.

ND = No data available.

DATA VALIDATION FOR: Halogenated and Aromatic Volatile
Compounds using SW-846 Method 8021

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial
Design Groundwater Monitoring Program

SDG NO: L3551

CONTRACT LAB: Thermo Analytical, Santa Ana, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: October 8, 1996

MATRIX: Water

Data validation was performed following the guidelines in the *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, 3rd Edition* (SW-846) dated January 1990 with current revisions, and the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, November 1988* with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Two facts should be noted by all data users. First, the "R" qualifier means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. Results qualified with an "R" should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Three water samples (listed below) were collected at the Paddy Lane Well site on July 12, 1996 and shipped to Thermo Analytical. These samples were analyzed for halogenated and aromatic volatile compounds using SW-846 Method 8021.

BP-GW-01900031-070996
BP-GW-01900031K-070996 (DUPLICATE SAMPLE)
BP-GW-01900031F-070996 (FIELD BLANK)

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding time is grossly exceeded).

The samples were analyzed within prescribed holding times.

II. GC/MS INSTRUMENT PERFORMANCE CHECK

Not required under SW-846 Method 8021.

III. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

The response factor measures the instrument's response to specific chemical compounds. The response factor must be ≥ 0.05 in both the initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). If the mean response factor (RRF) of the initial calibration or the continuing calibration is < 0.05 for any analyte, those analytes detected in the associated samples may be qualified as estimated, "J". The results for all analytes that were not detected may be rejected, "R".

Percent relative standard deviation (RSD) is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent difference (%D) compares the response factor of the continuing calibration check to the RRF from the initial calibration. %D is a measure of the instrument's daily performance. %RSD must be $< 30\%$ and %D must be $< 25\%$. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results for samples associated with an %RSD or %D that were above the acceptable limits may be qualified as estimated, "J" and the results for the analytes not detected may be qualified as non-detects with estimated detection limits, "UJ". Non-detects may be used without any qualification if the %RSD is > 30 based on professional judgement. If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified as unusable, "R".

IIIA. INITIAL CALIBRATION

All listed RRFs were ≥ 0.05 . The values listed as RRFs may be area counts, data were not present to verify the RRF values. All %RSDs were $< 30\%$ except the following:

DATE	CRITERIA OUTSIDE OF LIMITS	COMPOUND	VALUE OF CRITERIA	SAMPLE(S) AFFECTED
7/12/96	%RSD	Dibromomethane	49	None
		Dibromochloromethane	55	BP-GW-01900031-071296, BP-GW-01900031K-071296, BP-GW-01900031F-091296
		1,2-Dibromoethane	57	Same as above
		Bromoform	62	Same as above
		1,2-Dibromo-3-chloropropane	52	Same as above
7/25/96	%RSD	Bromomethane	51	None

The initial calibration dated 7/12/96 was only associated with the undiluted analyses. Due to gross calibration discrepancies, dibromochloromethane, 1,2-dibromoethane, bromoform, 1,2-dibromo-3-chloropropane in samples BP-GW-01900031-071296, BP-GW-01900031K-071296, and BP-GW-01900031F-091296 were qualified as non-detects with estimated detection limits, "UJ".

The initial calibration dated 7/25/96 is associated with the diluted analyses. Bromomethane was not detected in the undiluted sample and, therefore, the diluted results were not reported or qualified.

IIIB. CONTINUING CALIBRATION

All listed RRFs were ≥ 0.05 . The values listed as RRFs may be area counts; data were not present to verify the RRF values. All %Ds were $< 25\%$ except the following:

DATE	TIME	CRITERIA OUTSIDE OF LIMITS	COMPOUND	VALUE OF CRITERIA	SAMPLE(S) AFFECTED
7/12/96	9:58PM	%D	Chloromethane	31	None
			Dibromochloromethane	51	BP-GW-01900031-071296, BP-GW-01900031K-071296, BP-GW-01900031F-091296
			1,2-Dibromoethane	60	Same as above
			Bromoform	30	None
			1,2-Dibromo-3-chloropropane	28	None
7/13/96	11:02AM	%D	Chloromethane	67	None
			2,2-Dichloropropane	53	None
			Dibromochloromethane	39	None
			1,2-Dibromoethane	32	None
			1,1,2,2-Tetrachloroethane	31	None
7/26/96	1:14AM	%D	Bromomethane	37	None

Due to the 7/12/96 calibration deficiencies, the dibromochloromethane and 1,2-dibromoethane results for samples BP-GW-01900031-071296, BP-GW-01900031K-071296, and BP-GW-01900031F-071296 were qualified as non-detects with estimated detection limits, "UJ". The calibration dated 7/13/96 is not associated to any of the samples in the sample package being assessed.

The continuing calibration dated 7/26/96 is associated with the diluted analyses.

Chloromethane and 2,2-dichloropropane were not detected in the undiluted analyses and, therefore, the diluted results were not reported or qualified.

IV. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., method, trip, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and equipment rinsate blanks measure cross-contamination of samples during field procedures. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample (10 times for the common contaminants), the sample result may be qualified as non-detect, "U".

IVA. METHOD BLANKS

No analytes were detected in any of the method blanks.

IVB. TRIP BLANKS

A trip blank was not analyzed with this sample group.

IVC. FIELD BLANKS

The following analytes were detected in the field blank, BP-GW-01900031F-071296:

MATRIX	COMPOUND	CONCENTRATION ($\mu\text{g/L}$)	ACTION LEVEL ($\mu\text{g/L}$)	SAMPLE(S) AFFECTED
Water	Toluene	0.16	0.80	BP-GW-01900031-071296, BP-GW-01900031K-071296

Due to the equipment rinsate blank contamination, the toluene results for samples BP-GW-01900031-071296 and BP-GW-01900031K-071296 were qualified as non-detects, "U".

V. SURROGATES/SYSTEM MONITORING COMPOUNDS

All samples are spiked with surrogate/system monitoring compounds (SMC) compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured percent recovery (%R) of a surrogate/SMC is outside criteria, the results of that sample may be qualified as estimated, "J" or non-detects with estimated detection limits, "UJ".

2-Chloropropane, 1,4-dichlorobutane, and a,a,a-trifluorotoluene were added to each sample as surrogates. All %Rs were within the acceptable control limits except the following:

DATE	SURROGATE	%R	QC Limits	SAMPLE SPIKED
7/26/96	2-Chloropropane A,A,A-Trifluorotoluene	67 71	75-125 75-125	Matrix Spike (MS) MS

MS results are not qualified as part of data validation and, therefore, no action was taken.

VI. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/matrix spike duplicate (MSD) data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD results may be used in conjunction with other QC criteria for some additional qualification of data.

All %Rs and RPDs were within the acceptable ranges.

VII. LABORATORY CONTROL SAMPLES

Laboratory control sample (LCS) data are generated to determine the long-term precision and accuracy of the analytical method. The LCS results may be used for some qualification of data.

All %Rs and RPDs were within the acceptable ranges.

VIII. REGIONAL QUALITY ASSURANCE AND QUALITY CONTROL

Sample BP-GW-01900031K-071296 was collected as a duplicate sample of BP-GW-01900031-071296. The following analytes were detected in at least one of the samples:

COMPOUND	SAMPLE CONC. ($\mu\text{g/L}$)	DUP. CONC. ($\mu\text{g/L}$)	RPD	SAMPLE(S) AFFECTED
Dichlorodifluoromethane	6.2	6.2	0	None
Trichlorofluoromethane	0.62	0.51	19	None
1,1-Dichloroethene	5.2	5.5	6	None
trans-1,2-Dichloroethene	0.18	0.2	11	None
1,1-Dichloroethane	03.2	3.2	0	None
cis-1,2-Dichloroethene	15	16	6	None
Chloroform	5.7	5.8	2	None
1,1,1-Trichloroethane	0.79	0.49	47	None
Carbon Tetrachloride	4.0	3.9	3	None
1,2-Dichloroethane	3.8	4.0	5	None
Trichloroethene	130	120	8	None
Tetrachloroethene	19	19	0	None
Toluene	0.18	0.16	12	None
o-Xylene	0.18	0.11	48	None
Styrene	0.14	0.11	24	None
Isopropylbenzene	0.17	0.09U	NC	None
1,3,5-Trimethylbenzene	0.13	0.13	21	None
tert-Butylbenzene	0.3	0.15U	NC	None

COMPOUND	SAMPLE CONC. ($\mu\text{g/L}$)	DUP. CONC. ($\mu\text{g/L}$)	RPD	SAMPLE(S) AFFECTED
1,2,4-Trimethylbenzene	0.18	0.17	6	None
sec-Butylbenzene	0.16	0.13	21	None
n-Butylbenzene	0.12	0.16	29	None
Naphthalene	0.37U	0.93	NC	None

NC = Not Calculated.

Two RPDs were above the acceptable criteria ($\pm 35\%$) and three analytes were detected in only one of the samples. Based on professional judgement, the associated results were not qualified because the detected results were near the quantitation limit.

IX. INTERNAL STANDARDS

Internal standard (IS) performance criteria ensure that the GC sensitivity and response are stable during every experimental run. The IS area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the IS must not vary more than ± 30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to -100%) range of the associated standard, all of the positive results for compounds quantitated using that IS may be qualified as estimated, "J", and all non-detects may be qualified as non-detects with estimated detection limits, "UJ". Non-detects may be qualified as unusable, "R", if there is a severe loss of sensitivity ($< 25\%$ of associated IS area counts).

ISs were not analyzed and, therefore, no assessment was made.

X. COMPOUND IDENTIFICATION

Target compound list (TCL) compounds are identified on the GC by using the analyte's relative retention time (RRT). For the results to be a positively identified, the sample peak must be within ± 0.06 RRT units of the standard compound. If the RRT value is not within the acceptable range, the associated results may be qualified as non-detects, "U".

All RRTs were within ± 0.06 units of the standard compounds except the following:

SAMPLE WITH RRT VALUES OUTSIDE OF CRITERIA	COMPOUND	RRT	SAMPLE(S) AFFECTED
BP-GW-01900031-071296	1,1,1-Trichloroethane	-0.065	None
	Carbon Tetrachloride	-0.072	None
BP-GW-01900031K-071296	1,1,1-Trichloroethane	-0.066	None
	Carbon Tetrachloride	-0.071	None

The RRT for these compounds in the dilutions of the above samples were within ± 0.06 and, therefore, based on professional judgement, the results for 1,1,1-trichloroethane and carbon tetrachloride were not qualified.

XI. COMPOUND QUANTITATION AND REPORTED CONTRACT-REQUIRED QUANTITATION LIMITS

ISS were not analyzed and, therefore, calculations could not be verified. Non-detect results were not reported for the diluted samples and, therefore, contract-required quantitation limit (CRQL) adjustment for dilution could not be verified.

XII. TENTATIVELY IDENTIFIED COMPOUNDS

Not applicable.

XIII. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The system performance was acceptable. A summary of the overall assessment of the data is provided on the following page.

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU LABORATORY Thermo Analytical

SDG NO. L3551 DATA USER CDM

REVIEW COMPLETION DATE 10/08/96

NO. OF SAMPLES 3 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
2. GC/MS INSTRUMENT PERF.	<u>O/NA</u>	<u> </u>	<u> </u>	<u> </u>
3A. INITIAL CALIBRATIONS	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
3B. CONTINUING CALIBRATIONS	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
4. BLANKS	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
5. SURROGATES	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
6. MS/MSD	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
7. LCS/LCSD	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
8. REGIONAL QC	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
9. INTERNAL STANDARDS	<u>ND</u>	<u> </u>	<u> </u>	<u> </u>
10. COMPOUND IDENTIFICATION	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
12. COMPOUND QUANTITATION	<u>ND</u>	<u> </u>	<u> </u>	<u> </u>
13. SYSTEM PERFORMANCE	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
14. OVERALL ASSESSMENT	<u>O</u>	<u> </u>	<u> </u>	<u> </u>

O = No problems or minor problems that do not affect data usability.

X = No more than about 5% of the data points are qualified as either estimated or unusable.

NA = Not applicable.

ND = No data available.

DATA VALIDATION FOR: Metals using SW-846 Methods 6010/7000 Series

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial Design Groundwater Monitoring Program

SDG NO: L3551

CONTRACT LAB: Thermo Analytical, Santa Ana, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: October 9, 1996

MATRIX: Water

Data validation was performed following the guidelines in *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, 3rd Edition* (SW-846) dated January 1990 with current revisions and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, November 1988* with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detect), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Two water samples (listed below) were collected at Paddy Lane Well on July 12, 1996 and shipped to Thermo Analytical. These samples were analyzed for metals using SW-846 Methods 6010/7000 Series. The metals and associated methods are aluminum, barium, cadmium, chromium, copper, iron, manganese, nickel, zinc, calcium, magnesium, potassium, and sodium by SW-846 Method 6010; arsenic by SW-846 Method 7060; lead by SW-846 Method 7421; and mercury by SW-846 Method 7470.

BP-GW-01900031-070996
BP-GW-01900031K-070996 (DUPLICATE SAMPLE)

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding times are grossly exceeded).

The samples were analyzed within prescribed holding times.

II. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

An initial calibration verification (ICV) is required once per 24 hours and a continuing calibration verification (CCV) is required at a frequency of 10 percent (%) or every two hours during an analytical run, whichever is more frequent. The % recovery (R) of all analytes except mercury and cyanide must be between 90-110%. The %R of mercury must be between 80-120% and cyanide between 85-115%. If the %R is outside of the acceptable range, the result of that analyte in the associated sample(s) may be qualified as estimated, "J", non-detect with an estimated detection limit, "UJ", or unusable, "R".

IIA. INITIAL CALIBRATION

An ICV was analyzed once per 24 hours. All %Rs were within the acceptable limits.

IIB. CONTINUING CALIBRATION

A CCV was analyzed per the appropriate frequency. All %Rs were within the acceptable range.

III. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., preparation, initial calibration, continuing calibration, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Preparation blanks (PBs), initial calibration blanks (ICBs), and continuing calibration blanks (CCBs) measure laboratory contamination. Field and equipment rinsate blanks measure cross-contamination of samples during field operations. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample, the sample result may be qualified as non-detect, "U".

IIIA. PREPARATION, INITIAL CALIBRATION, AND CONTINUING CALIBRATION BLANKS

The following analytes were detected in either a PB, ICB, or CCB:

TYPE OF BLANK	COMPOUND	MAX CONC (mg/L)	ACTION LEVEL (mg/L)	SAMPLE(S) AFFECTED
ICB	Barium	0.0014	0.007	None
CCB	Iron	0.0549	0.2745	BP-GW-01900031-071296, BP-GW-01900031K-071296
PB	Lead	0.00078	0.0039	Same as above
PB	Zinc	0.0187	0.0935	Same as above
PB	Calcium	0.302	1.51	None
Pb	Magnesium	0.219	1.095	None
PB	Sodium	0.21	1.05	None

Due to blank contamination, the iron, lead, and zinc results for samples BP-GW-01900031-071296 and BP-GW-01900031K-071296 were qualified as non-detects, "U".

IIIB. FIELD BLANKS

A field blank was not analyzed for metals.

IIIC. EQUIPMENT RINSATE BLANKS

An equipment rinsate blank was not analyzed for metals.

IV. INTERFERENCE CHECK SAMPLE

The interference check sample (ICS) verifies the laboratory's interelement and background correction factors. The %Rs for the inductively coupled plasma (ICP) analysis of the ICS AB solution must lie between 80-120%. If the %Rs are not within acceptable limits and the concentration of either aluminum, calcium, iron, or magnesium in a sample are comparable to or greater than (>) their respective levels in the ICS, the associated results may be qualified.

All %Rs were within 80-120%.

V. LABORATORY CONTROL SAMPLES

The laboratory control sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All aqueous LCS %Rs must be within 80-120%, except for antimony and silver which have no fixed control limits. If the %Rs do not fall within the acceptable limits, sample results may be qualified.

All %Rs were within the acceptable ranges.

VI. DUPLICATE SAMPLE ANALYSIS

Laboratory duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Laboratory duplicate

analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. If the RPDs of the laboratory duplicate analyses are not within $\pm 20\%$ (35% for soils) for results ≥ 5 times the contract-required detection limit ($5 \times \text{CRDL}$) or $\pm 1 \times \text{CRDL}$ ($2 \times \text{CRDL}$ for soils) for results $< 5 \times \text{CRDL}$, the associated results may be qualified.

The laboratory duplicate aliquot was collected from sample BP-GW-01900031K-071296. The laboratory duplicate was only analyzed for barium, calcium, magnesium, potassium, and sodium. The following analytes were detected in at least one of the laboratory duplicate pair analyses:

COMPOUND	CRDL (mg/L)	5 \times CRDL (mg/L)	SAMPLE CONC (mg/L)	DUP CONC (mg/L)	QC CONTROL LIMITS	SAMPLE(S) AFFECTED
Barium	0.2	1.0	0.131	0.136	$\pm \text{CRDL}$	None
Calcium	5.0	25	70.5	71.5	RPD=1	None
Magnesium	5.0	25	13.1	13.4	$\pm \text{CRDL}$	None
Potassium	5.0	25	3.96	4.2	$\pm \text{CRDL}$	None
Sodium	5.0	25	12.7	13.3	$\pm \text{CRDL}$	None

All laboratory duplicate results met criteria.

VII. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. If the %Rs of the pre-digestion spiked sample (matrix spike [MS]) do not fall between 75-125%, the associated sample results may be qualified and a post-digestion spiked sample (PDS) is required for all analytes. The acceptable control limits for the PDS %Rs are also 75-125%, but the data from the PDS is not used to qualify data.

All %Rs of the MS and PDS met the criteria except the following:

QC TYPE	COMPOUND	4 \times SPIKE CONC (mg/L)	SAMPLE CONC (mg/L)	%R	SAMPLE(S) AFFECTED
MS	Calcium	2.0	70.5	40%	None
PDS	Calcium	5.0	70.5	284%	None
	Magnesium	5.0	13.1	132%	

Although the calcium %R for the MS was outside of the acceptable control limits, the calcium result for the sample was $> 4 \times$ the spike concentration and, therefore, no action was taken. A post-digestion spiked sample was analyzed. The calcium and magnesium %Rs were outside of the acceptable limits. No action was taken due to PDS results.

VIII. GRAPHITE FURNACE ATOMIC ABSORPTION QUALITY CONTROL

The raw data were not provided and, therefore, this was not assessed.

IX. ICP SERIAL DILUTION

The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is $> 50\times$ the instrument detection limit (IDL), then the 5-fold dilution result must agree within a 10% difference (D). If this control limit is exceeded, the associated results may be qualified.

The ICP serial dilution was only analyzed for barium, calcium, magnesium, potassium, and sodium. The results for these analytes met the acceptable criteria except the following:

ELEMENT	IDL (mg/L)	50xIDL (mg/L)	SAMP CONC (mg/L)	DIL CONC (mg/L)	%D	SAMPLE(S) AFFECTED
Calcium	0.102	5.1	70.5	78.7	12	BP-GW-01900031-071296 BP-GW-01900031K-071296
Magnesium	0.0379	1.895	13.1	14.4	14	Same as above
Sodium	0.108	5.4	12.7	14.1	11	Same as above

Due to discrepancies in the ICP serial dilution results, the calcium, magnesium, and sodium results for samples BP-GW-01900031-071296 and BP-GW-01900031K-071296 were qualified as estimated, "J".

X. FIELD DUPLICATES

Field duplicate samples may be collected and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance. If the RPDs of the field duplicate analyses are not within $\pm 30\%$ (50% for soils) for results $\geq 5\times\text{CRDL}$ or $\pm 1\times\text{CRDL}$ ($2\times\text{CRDL}$ for soils) for results $< 5\times\text{CRDL}$, the associated results may be qualified.

Sample BP-GW-01900031K-071296 was the duplicate of sample BP-GW-01900031-071296. The following analytes were detected in at least one of the samples:

COMPOUND	CRDL (mg/L)	5xCRDL (mg/L)	SAMPLE CONC (mg/L)	DUP CONC (mg/L)	QC CONTROL LIMITS	SAMPLE(S) AFFECTED
Aluminum	0.2	1.0	0.0437U	0.0963	±2xCRDL	None
Barium	0.2	1.0	0.13	0.131	±2xCRDL	None
Cadmium	0.005	0.025	0.00276	0.0017	±2xCRDL	None
Calcium	5.0	25	70.8	70.5	RPD=1	None
Chromium	0.01	0.05	0.00194	0.00442	±2xCRDL	None
Copper	0.025	0.125	0.0129	0.0139	±2xCRDL	None
Iron	0.1	0.5	0.0552	0.195	±2xCRDL	None
Lead	0.005	0.025	0.00279	0.00251	±2xCRDL	None
Magnesium	5.0	25	13.1	13.1	±2xCRDL	None
Manganese	0.015	0.075	0.00631	0.0045	±2xCRDL	None
Nickel	0.04	0.2	0.00501	0.00631	±2xCRDL	None
Potassium	5.0	25	4.02	3.96	±2xCRDL	None
Sodium	5.0	25	12.8	12.7	±2xCRDL	None
Zinc	0.02	0.1	0.091	0.069	±2xCRDL	None

All field duplicate results met criteria.

XI. OVERALL ASSESSMENT

A summary of the overall assessment of the data is provided on the next page.

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU LABORATORY Thermo Analytical

SDG NO. L3551 DATA USER CDM

REVIEW COMPLETION DATE 10/09/96

NO. OF SAMPLES 2 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	METALS	WET CHEMISTRY
1. HOLDING TIMES	<u> O </u>	<u> </u>
2A. INITIAL CALIBRATIONS	<u> O </u>	<u> </u>
2B. CONTINUING CALIBRATIONS	<u> O </u>	<u> </u>
3A. LAB BLANKS	<u> X </u>	<u> </u>
3B. FIELD BLANKS	<u> ND </u>	<u> </u>
3C. RINSATE BLANKS	<u> ND </u>	<u> </u>
4. INTERFERENCE CHECK SAMPLE	<u> O </u>	<u> </u>
5. LCS	<u> O </u>	<u> </u>
6. LAB DUPLICATE	<u> O </u>	<u> </u>
7. SPIKE SAMPLES	<u> O </u>	<u> </u>
8. GFAA QC	<u> ND </u>	<u> </u>
9. ICP SERIAL DILUTION	<u> X </u>	<u> </u>
10. FIELD DUPLICATES	<u> O </u>	<u> </u>
11. OVERALL ASSESSMENT	<u> O </u>	<u> </u>

O = No problems or minor problems that do not affect data usability.

X = No more than about 5% of the data points are qualified as either estimated or unusable.

ND = No data available.

DATA VALIDATION FOR: Wet Chemistry using EPA Methods 100/300 Series

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial Design Groundwater Monitoring Program

SDG NO: L3551

CONTRACT LAB: Thermo Analytical, Santa Ana, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: October 10, 1996

MATRIX: Water

Data validation was performed following the guidelines in *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983 with current revisions and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, November 1988 with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detect), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Two water samples (listed below) were collected at Paddy Lane Well on July 12, 1996 and shipped to Thermo Analytical. These samples were analyzed for wet chemistry parameters using EPA Methods 100/300 Series. The wet chemistry parameters and methods include alkalinity by EPA Method 310.1; total dissolved solids (TDS) by EPA Method 160.1; total suspended solids (TSS) by EPA Method 160.2; hardness by EPA Method 130.2; and chloride, sulfate, nitrate, and nitrite by Method 300.0.

BP-GW-01900031-071296
BP-GW-01900031K-071296 (DUPLICATE SAMPLE)

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding times are grossly exceeded).

The samples were analyzed within prescribed holding times.

II. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

For EPA Method 300.0, the instrument must be calibrated daily using a minimum of a blank and three standards. An initial calibration verification (ICV) is required immediately after daily calibration and a continuing calibration verification (CCV) is required at a frequency of 10 percent (%) and at the end of the an analytical run, whichever is more frequent. The ICV response or retention time of each analyte must agree with the expected value by ± 10 percent. The % R of the CCV must be within 90 to 100 percent. If the response is outside of the acceptable range, the result of that analyte in the associated sample(s) may be qualified as estimated, "J", non-detect with an estimated detection limit, "UJ", or unusable, "R".

IIA. INITIAL CALIBRATION

An initial calibration was performed with a blank and three standards. With the exception of nitrite and sulfate, ICV responses for nitrate and chloride were within 10 percent of the true value. The ICV responses for nitrite and sulfate were 89 and 82 percent, respectively, which are lower than the method specified limit of 90-110 percent; however, both the sulfate and nitrite recoveries were within the acceptance limits provided by an independent source of the ICV. Because the CCVs were within acceptable limits, and the ICVs were within a range considered acceptable by the ICV source, it is the reviewer's professional judgement that the nitrite and sulfate data should not be qualified.

IIB. CONTINUING CALIBRATION

CCVs were analyzed at the appropriate frequency and in the correct analytical sequence. Percent recovery for nitrate, nitrite, sulfate and chloride were between acceptable limits of 90 to 110 percent.

III. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., method, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method

blanks measure laboratory contamination. Field and equipment rinsate blanks measure cross-contamination of samples during field procedures. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample, the sample result may be qualified as non-detect, "U".

IIIA. METHOD BLANKS

A method blank was analyzed for all parameters. There were no analytes detected in any of the method blanks.

IIIB. FIELD BLANKS

A field blank was not analyzed for wet chemistry parameters.

IIIC. EQUIPMENT RINSATE BLANKS

An equipment rinsate blank was not analyzed for wet chemistry parameters.

IV. LABORATORY CONTROL SAMPLES

The laboratory control sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. For EPA Method 300, all aqueous LCS %Rs must be within 90-110% and all RPDs must be less than 20%. For all other wet chemistry methods, the %Rs must be within 80-120% and all RPDs must be less than 20%. If the %Rs or RPDs do not fall within the acceptable limits, sample results may be qualified.

An LCS and LCSD were analyzed for chloride, sulfate, nitrate, and nitrite and an LCS was analyzed for alkalinity. All %Rs and RPDs were within the acceptable limits.

V. DUPLICATE SAMPLE ANALYSIS

Laboratory duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Laboratory duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. If the RPDs of the laboratory duplicate analyses are not within $\pm 20\%$ (35% for soils) for results ≥ 5 times the contract-required detection limit (5xCRDL) or ± 1 xCRDL (2xCRDL for soils) for results < 5 xCRDL, the associated results may be qualified.

No data were provided for laboratory duplicate analysis for any of the parameters.

VI. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. If the %Rs of the spiked sample (matrix spike [MS]) do not fall between 80-120% or the RPDs of the duplicate results do not fall between $\pm 20\%$, the associated sample results may be qualified.

An MS and MSD were analyzed for chloride, sulfate, nitrate, and nitrite and an MS was analyzed for alkalinity. All %Rs and RPDs were within the acceptable control limits except the following:

QC TYPE	COMPOUND	%R	SAMPLE(S) AFFECTED
MS	Chloride	145%	BP-GW-01900031-071296 BP-GW-01900031K-071296
MSD	Chloride	148%	BP-GW-01900031-071296 BP-GW-01900031K-071296

Due to the MS/MSD discrepancies, the chloride results for samples BP-GW-01900031-071296 and BP-GW-01900031K-071296 were qualified as estimated, "J".

VII. FIELD DUPLICATES

Field duplicate samples may be collected and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance. If the RPDs of the field duplicate analyses are not within $\pm 30\%$ (50% for soils) for results $\geq 5 \times \text{CRDL}$ or $\pm 1 \times \text{CRDL}$ ($2 \times \text{CRDL}$ for soils) for results $< 5 \times \text{CRDL}$, the associated results may be qualified.

Sample BP-GW-01900031K-071296 was collected as the duplicate of sample BP-GW-01900031-071296. The following analytes were detected in at least one of the samples:

COMPOUND	CRDL (mg/L)	5xCRDL (mg/L)	SAMPLE CONC (mg/L)	DUP CONC (mg/L)	QC CONTROL LIMITS	SAMPLE(S) AFFECTED
Alkalinity as: HCO_3^-	1.0	5.0	210	200	RPD=5	None
TDS	12	60	340	360	RPD=6	None
TSS	10	50	17	10U	$\pm 2 \times \text{CRDL}$	None
Hardness	1.0	5.0	250	280	RPD=11	None
Chloride	1.3	6.5	21	21	RPD=0	None
Sulfate	1.0	5.0	37	37	RPD=0	None
Nitrate	0.25	1.25	6.7	6.7	RPD=0	None

All field duplicate results met criteria.

VIII. OVERALL ASSESSMENT

A summary of the overall assessment of the data is provided at the end on the next page.

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU

LABORATORY Thermo Analytical

SDG NO. L3551

DATA USER CDM

REVIEW COMPLETION DATE 10/10/96

NO. OF SAMPLES 2 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	METALS	WET CHEMISTRY
1. HOLDING TIMES	<u> </u>	<u> O </u>
2A. INITIAL CALIBRATIONS	<u> </u>	<u> O </u>
2B. CONTINUING CALIBRATIONS	<u> </u>	<u> O </u>
3A. LAB BLANKS	<u> </u>	<u> O </u>
3B. FIELD BLANKS	<u> </u>	<u> ND </u>
3C. RINSATE BLANKS	<u> </u>	<u> ND </u>
4. INTERFERENCE CHECK SAMPLE	<u> </u>	<u> NA </u>
5. LCS	<u> </u>	<u> O </u>
6. LAB DUPLICATE	<u> </u>	<u> ND </u>
7. SPIKE SAMPLES	<u> </u>	<u> X </u>
8. GFAA QC	<u> </u>	<u> NA </u>
9. ICP SERIAL DILUTION	<u> </u>	<u> NA </u>
10. FIELD DUPLICATES	<u> </u>	<u> O </u>
11. OVERALL ASSESSMENT	<u> </u>	<u> O </u>

O = No problems or minor problems that do not affect data usability.

X = No more than about 5% of the data points are qualified as either estimated or unusable.

NA = Not applicable.

ND = No data available.

DATA VALIDATION FOR: Volatile Organic Compounds using SW-846
Method 8260

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial
Design Groundwater Monitoring Program

SDG NO: 121536

CONTRACT LAB: Quanterra Environmental Services, Santa
Anna, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: November 18, 1996

MATRIX: Water

Data validation was performed following the guidelines in the *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, 3rd Edition* (SW-846) dated January 1990 with current revisions, and the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, November 1988* with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Two facts should be noted by all data users. First, the "R" qualifier means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. Results qualified with an "R" should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Eight water samples (listed below) were collected at the Baldwin Park site on September 24, 1996 and shipped to Quanterra Environmental Services. These samples were analyzed for volatile organic compounds using SW-846 Method 8260.

BP-GW-01900029-092496
BP-GW-01900035-092496
BP-GW-MW50801-092496
BP-GW-MW50802-092496
BP-GW-MW50803-092496
BP-GW-MW50803N-092496 (FIELD BLANK)
BP-GW-MW50804-092496
BP-GW-019000831-092496

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding time is grossly exceeded).

The samples were analyzed within prescribed holding times.

II. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB performance results were reviewed and found to be within the specified criteria.

III. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

The response factor measures the instrument's response to specific chemical compounds. The response factor must be ≥ 0.05 in both the initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). If the mean response factor (RRF) of the initial calibration or the continuing calibration is < 0.05 for any analyte, those analytes detected in the associated samples may be qualified as estimated, "J". The results for all analytes that were not detected may be rejected, "R".

Percent relative standard deviation (RSD) is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent difference (%D) compares the response factor of the continuing calibration check to the RRF from the initial calibration. %D is a measure of the instrument's daily performance. %RSD must be $< 30\%$ and %D must be $< 25\%$. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results for samples associated with an %RSD or %D that were above the acceptable limits may be qualified as estimated, "J" and the results for the analytes not detected may be qualified as non-detects with estimated detection limits, "UJ". Non-detects may be used without any qualification if the %RSD is > 30 based on professional judgement. If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified as unusable, "R".

IIIA. INITIAL CALIBRATION

All RFs were ≥ 0.05 and all %RSDs were $< 30\%$ except the following:

DATE	CRITERIA OUTSIDE OF LIMITS	COMPOUND	VALUE OF CRITERIA	SAMPLE(S) AFFECTED
9/17/96	RF RFave	Acetone	0.04710 0.04856 0.04505 0.04102 0.04636	All Samples
9/17/96	RF RFave	2-Butanone	0.03069 0.03883 0.02638 0.02432 0.02722	All Samples
9/17/96	RF RFave	4-Methyl-2-pentanone	0.03847 0.02883 0.02422 0.0383 0.037 0.03336	All Samples
9/17/96	%RSD	1,2-Dibromo-3-chloropropane	58.573	All Samples

Due to the initial calibration verification, the positive results for acetone, 2-butanone, and 4-methyl-2-pentanone were qualified as estimated (J), the non-detect results for acetone, 2-butanone, and 4-methyl-2-pentanone were qualified as unusable (R), the positive results for 1,2-dibromo-3-chloropropane were qualified as estimated (J), and the nondetect results for 1,2-dibromo-3-propane were qualified as non-detect with estimated detection limits (UJ) for all samples.

IIIB. CONTINUING CALIBRATION

All listed RFs were ≥ 0.05 and all %Ds were $< 25\%$ except the following:

DATE	CRITERIA OUTSIDE OF LIMITS	COMPOUND	VALUE OF CRITERIA	SAMPLE(S) AFFECTED
10/4/96	%RSD	Acetone	71.73	All Samples
10/4/96	%RSD	Chloromethane	31.15	All Samples

Due to the continuing calibration on 10/4/96, the positive results for acetone and chloromethane were qualified as estimated (J) and the non-detect results for acetone were qualified as non-detect with estimated detection limits (UJ).

IV. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., method, trip, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and equipment rinsate blanks measure cross-contamination of samples during field procedures. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a

blank sample (10 times for the common contaminants), the sample result may be qualified as non-detect, "U".

IVA. METHOD BLANKS

No analytes were detected in any of the method blanks.

IVB. TRIP BLANKS

A trip blank was not analyzed with this sample group.

IVC. FIELD BLANKS

A field blank was not analyzed with this sample group.

IVD. EQUIPMENT RINSATE BLANKS

The following analytes were detected in the equipment rinsate blank, BP-GW-MW50803N-092496:

MATRIX	COMPOUND	CONCENTRATION ($\mu\text{g/L}$)	ACTION LEVEL ($\mu\text{g/L}$)	SAMPLE(S) AFFECTED
Water	Methylene Chloride	1.8	18	All non-blank samples
Water	Trichloroethene	0.61	3.05	All non-blank samples except BP-GW-MW50804- 092496
Water	Methyl-t-butyl ether	1.0	5.0	BP-GW-MW50801-092496

Due to the equipment rinsate blank contamination, the methylene chloride, trichloroethene, and/or methyl-t-butyl ether results for the samples listed in the right column were qualified as non-detects, "U".

V. SURROGATES/SYSTEM MONITORING COMPOUNDS

All samples are spiked with surrogate/system monitoring compounds (SMC) compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured percent recovery (%R) of a surrogate/SMC is outside criteria, the results of that sample may be qualified as estimated, "J" or non-detects with estimated detection limits, "UJ".

All %Rs were within the acceptable control limits.

VI. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/matrix spike duplicate (MSD) data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD results may be used in conjunction with other QC criteria for some additional qualification of data.

All %Rs and RPDs were within the acceptable ranges.

VII. LABORATORY CONTROL SAMPLES

Laboratory control sample (LCS) data are generated to determine the long-term precision and accuracy of the analytical method. The LCS results may be used for some qualification of data.

All %Rs and RPDs were within the acceptable ranges.

VIII. REGIONAL QUALITY ASSURANCE AND QUALITY CONTROL

Duplicate samples were not collected for this data package.

IX. INTERNAL STANDARDS

Internal standard (IS) performance criteria ensure that the GC sensitivity and response are stable during every experimental run. The IS area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the IS must not vary more than ± 30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to -100%) range of the associated standard, all of the positive results for compounds quantitated using that IS may be qualified as estimated, "J", and all non-detects may be qualified as non-detects with estimated detection limits, "UJ". Non-detects may be qualified as unusable, "R", if there is a severe loss of sensitivity ($< 25\%$ of associated IS area counts).

All IS data met acceptable criteria.

X. COMPOUND IDENTIFICATION

Target compound list (TCL) compounds are identified on the GC by using the analyte's relative retention time (RRT). For the results to be a positively identified, the sample peak must be within ± 0.06 RRT units of the standard compound. If the RRT value is not within the acceptable range, the associated results may be qualified as non-detects, "U".

All compounds were identified correctly.

XI. COMPOUND QUANTITATION AND REPORTED CONTRACT-REQUIRED QUANTITATION LIMITS

All criteria were met.

XII. TENTATIVELY IDENTIFIED COMPOUNDS

Not applicable.

XIII. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The system performance was acceptable. A summary of the overall assessment of the data is provided on the following page.

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU LABORATORY Quanterra Environ. Services
SDG NO. 121536 DATA USER CDM

REVIEW COMPLETION DATE 11/18/96

NO. OF SAMPLES 8 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
2. GC/MS INSTRUMENT PERF.	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
3A. INITIAL CALIBRATIONS	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
3B. CONTINUING CALIBRATIONS	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
4. BLANKS	<u>X</u>	<u> </u>	<u> </u>	<u> </u>
5. SURROGATES	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
6. MS/MSD	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
7. LCS/LCSD	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
8. REGIONAL QC	<u>NA</u>	<u> </u>	<u> </u>	<u> </u>
9. INTERNAL STANDARDS	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
10. COMPOUND IDENTIFICATION	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
12. COMPOUND QUANTITATION	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
13. SYSTEM PERFORMANCE	<u>O</u>	<u> </u>	<u> </u>	<u> </u>
14. OVERALL ASSESSMENT	<u>O</u>	<u> </u>	<u> </u>	<u> </u>

O = No problems or minor problems that do not affect data usability.

X = No more than about 5% of the data points are qualified as either estimated or unusable.

NA = Not applicable.

ND = No data available.

DATA VALIDATION FOR: Metals using SW-846 Methods 6010/7000 Series

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial Design Groundwater Monitoring Program

SDG NO: 121536

CONTRACT LAB: Quanterra Environmental Services, Santa Anna, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: November 18, 1996

MATRIX: Water

Data validation was performed following the guidelines in *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, 3rd Edition* (SW-846) dated January 1990 with current revisions and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, November 1988* with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detect), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Five water samples (listed below) were collected at the Baldwin Park site on September 24, 1996 and shipped to Quanterra Environmental Services. These samples were analyzed for metals using SW-846 Methods 6010/7000 Series. The metals and associated methods are aluminum, barium, cadmium, chromium, copper, iron, manganese, nickel, zinc, calcium, magnesium, potassium, and sodium by SW-846 Method 6010; arsenic by SW-846 Method 7060; lead by SW-846 Method 7421; and mercury by SW-846 Method 7470.

BP-GW-MW50801-092496
BP-GW-MW50802-092496
BP-GW-MW50803-092496
BP-GW-MW50803N-092496 (FIELD BLANK)
BP-GW-MW50804-092496

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding times are grossly exceeded).

The samples were analyzed within prescribed holding times.

II. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

An initial calibration verification (ICV) is required once per 24 hours and a continuing calibration verification (CCV) is required at a frequency of 10 percent (%) or every two hours during an analytical run, whichever is more frequent. The % recovery (R) of all analytes except mercury and cyanide must be between 90-110%. The %R of mercury must be between 80-120% and cyanide between 85-115%. If the %R is outside of the acceptable range, the result of that analyte in the associated sample(s) may be qualified as estimated, "J", non-detect with an estimated detection limit, "UJ", or unusable, "R".

IIA. INITIAL CALIBRATION

An ICV was analyzed once per 24 hours. All %Rs were within the acceptable limits.

IIB. CONTINUING CALIBRATION

A CCV was analyzed per the appropriate frequency. All %Rs were within the acceptable range.

III. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., preparation, initial calibration, continuing calibration, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Preparation blanks (PBs), initial calibration blanks (ICBs), and continuing calibration blanks (CCBs) measure laboratory contamination. Field and equipment rinsate blanks measure cross-contamination of samples during field operations. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample, the sample result may be qualified as non-detect, "U".

IIIA. PREPARATION, INITIAL CALIBRATION, AND CONTINUING CALIBRATION BLANKS

The results for the calibration blanks were reported to the reportable detection limit and not the instrument detection limit. No analytes were detected in the PB, ICB, or CCB.

IIIB. FIELD BLANKS

A field blank was not analyzed for metals.

IIIC. EQUIPMENT RINSATE BLANKS

No analytes were detected in the equipment rinsate blank.

IV. INTERFERENCE CHECK SAMPLE

The interference check sample (ICS) verifies the laboratory's interelement and background correction factors. The %Rs for the inductively coupled plasma (ICP) analysis of the ICS AB solution must lie between 80-120%. If the %Rs are not within acceptable limits and the concentration of either aluminum, calcium, iron, or magnesium in a sample are comparable to or greater than (>) their respective levels in the ICS, the associated results may be qualified.

All %Rs were within 80-120%.

V. LABORATORY CONTROL SAMPLES

The laboratory control sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All aqueous LCS %Rs must be within 80-120%, except for antimony and silver which have no fixed control limits. If the %Rs do not fall within the acceptable limits, sample results may be qualified.

All %Rs were within the acceptable ranges.

VI. DUPLICATE SAMPLE ANALYSIS

Laboratory duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Laboratory duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. If the RPDs of the laboratory duplicate analyses are not within $\pm 20\%$ (35% for soils) for results ≥ 5 times the contract-required detection limit (5xCRDL) or ± 1 xCRDL (2xCRDL for soils) for results < 5 xCRDL, the associated results may be qualified.

A laboratory duplicate was not analyzed.

VII. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. If the %Rs of the pre-digestion spiked sample (matrix spike [MS]) do not fall between 75-125%, the associated sample results may be qualified and a post-digestion spiked sample (PDS) is required for all analytes. The acceptable

control limits for the PDS %Rs are also 75-125%, but the data from the PDS is not used to qualify data.

All %Rs of the MS and MSDs met the criteria.

VIII. GRAPHITE FURNACE ATOMIC ABSORPTION QUALITY CONTROL

The raw data were not provided and, therefore, was not assessed.

IX. ICP SERIAL DILUTION

The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is $> 50\times$ the instrument detection limit (IDL), then the 5-fold dilution result must agree within a 10% difference (D). If this control limit is exceeded, the associated results may be qualified.

All %Ds were within the acceptable control limits.

X. FIELD DUPLICATES

Field duplicate samples may be collected and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance. If the RPDs of the field duplicate analyses are not within $\pm 30\%$ (50% for soils) for results $\geq 5\times\text{CRDL}$ or $\pm 1\times\text{CRDL}$ ($2\times\text{CRDL}$ for soils) for results $< 5\times\text{CRDL}$, the associated results may be qualified.

A field duplicate was not collected with this sample group.

XI. OVERALL ASSESSMENT

A summary of the overall assessment of the data is provided on the next page.

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU LABORATORY Ouanterra Env. Services

SDG NO. 121536 DATA USER CDM

REVIEW COMPLETION DATE 11/18/96

NO. OF SAMPLES 5 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	METALS	WET CHEMISTRY
1. HOLDING TIMES	<u>O</u>	<u> </u>
2A. INITIAL CALIBRATIONS	<u>O</u>	<u> </u>
2B. CONTINUING CALIBRATIONS	<u>O</u>	<u> </u>
3A. LAB BLANKS	<u>O</u>	<u> </u>
3B. FIELD BLANKS	<u>ND</u>	<u> </u>
3C. RINSATE BLANKS	<u>O</u>	<u> </u>
4. INTERFERENCE CHECK SAMPLE	<u>O</u>	<u> </u>
5. LCS	<u>O</u>	<u> </u>
6. LAB DUPLICATE	<u>ND</u>	<u> </u>
7. SPIKE SAMPLES	<u>O</u>	<u> </u>
8. GFAA QC	<u>ND</u>	<u> </u>
9. ICP SERIAL DILUTION	<u>O</u>	<u> </u>
10. FIELD DUPLICATES	<u>ND</u>	<u> </u>
11. OVERALL ASSESSMENT	<u>O</u>	<u> </u>

O = No problems or minor problems that do not affect data usability.

X = No more than about 5% of the data points are qualified as either estimated or unusable.

ND = No data available.

DATA VALIDATION FOR: Wet Chemistry using EPA Methods 100/300 Series

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial Design Groundwater Monitoring Program

SDG NO: 121536

CONTRACT LAB: Quanterra Environmental Services, Santa Ana, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: November 18, 1996

MATRIX: Water

Data validation was performed following the guidelines in *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983 with current revisions and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, November 1988 with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detect), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Five water samples (listed below) were collected at the Baldwin Park site on September 24, 1996 and shipped to Quanterra Environmental Services. These samples were analyzed for wet chemistry parameters using EPA Methods 100/300 Series. The wet chemistry parameters and methods include alkalinity by EPA Method 310.1; total dissolved solids (TDS) by EPA Method 160.1; total suspended solids (TSS) by EPA Method 160.2; hardness by EPA Method 130.2; and chloride, sulfate, nitrate, and nitrite by Method 300.0.

BP-GW-MW50801-092496
BP-GW-MW50802-092496
BP-GW-MW50803-092496
BP-GW-MW50803N-092496 (FIELD BLANK)
BP-GW-MW50804-092496

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding times are grossly exceeded).

The samples were analyzed within prescribed holding times.

II. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

For EPA Method 300.0, the instrument must be calibrated daily using a minimum of a blank and three standards. An initial calibration verification (ICV) is required immediately after daily calibration and a continuing calibration verification (CCV) is required at a frequency of 10 percent (%) and at the end of the an analytical run, whichever is more frequent. The ICV response or retention time of each analyte must agree with the expected value by ± 10 percent. The % R of the CCV must be within 90 to 100 percent. If the response is outside of the acceptable range, the result of that analyte in the associated sample(s) may be qualified as estimated, "J", non-detect with an estimated detection limit, "UJ", or unusable, "R".

IIA. INITIAL CALIBRATION

An initial calibration was performed with a blank and three standards. All ICV responses met the acceptable criteria for all analytes except chloride on 9/25/96 and 9/26/96. The final analysis of the samples were conducted on 9/27/96 and, therefore, no qualification is necessary.

IIB. CONTINUING CALIBRATION

CCVs were analyzed at the appropriate frequency and in the correct analytical sequence. All CCV %Rs met the acceptable criteria for all analytes except chloride on 9/25/96 and 9/26/96. The final analysis of the samples were conducted on 9/27/96 and, therefore, no qualification is necessary.

III. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., method, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and equipment rinsate blanks measure cross-contamination of samples during field procedures. If the concentration of an analyte detected in a sample is less than 5 times the

concentration detected in a blank sample, the sample result may be qualified as non-detect, "U".

IIIA. METHOD AND CALIBRATION BLANKS

A method blank was analyzed for all parameters. There were no analytes detected in any of the method blanks. Chloride and sulfate were detected in the CCB analyzed on 9/25/96 and chloride was detected in the CCB analyzed on 9/26/96. None of the samples were associated with these CCBs and, therefore, no qualifications were made.

IIIB. FIELD BLANKS

A field blank was not analyzed for wet chemistry parameters.

IIIC. EQUIPMENT RINSATE BLANKS

No analytes were detected in the equipment rinsate blank.

IV. LABORATORY CONTROL SAMPLES

The laboratory control sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. For EPA Method 300, all aqueous LCS %Rs must be within 90-110% and all RPDs must be less than 20%. For all other wet chemistry methods, the %Rs must be within 80-120% and all RPDs must be less than 20%. If the %Rs or RPDs do not fall within the acceptable limits, sample results may be qualified.

An LCS and LCSD were analyzed for TDS, TSS, alkalinity, and hardness and an LCS was analyzed for nitrate, nitrite, chloride, and sulfate. All %Rs and RPDs were within the acceptable limits.

V. DUPLICATE SAMPLE ANALYSIS

Laboratory duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Laboratory duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. If the RPDs of the laboratory duplicate analyses are not within $\pm 20\%$ (35% for soils) for results ≥ 5 times the contract-required detection limit (5xCRDL) or ± 1 xCRDL (2xCRDL for soils) for results < 5 xCRDL, the associated results may be qualified.

A laboratory duplicate was analyzed for TDS, TSS, alkalinity, and hardness. All RPDs met acceptable criteria.

VI. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. If the %Rs of the spiked sample (matrix spike [MS]) do not fall between 80-120% or the RPDs of the duplicate results do not fall between $\pm 20\%$, the associated sample results may be qualified.

An MS and MSD were analyzed for chloride, sulfate, nitrate, and nitrite. All %Rs and RPDs were within the acceptable control limits.

VII. FIELD DUPLICATES

Field duplicate samples may be collected and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance. If the RPDs of the field duplicate analyses are not within $\pm 30\%$ (50% for soils) for results $\geq 5 \times \text{CRDL}$ or $\pm 1 \times \text{CRDL}$ ($2 \times \text{CRDL}$ for soils) for results $< 5 \times \text{CRDL}$, the associated results may be qualified.

A field duplicate sample was not collected with this sample group

VIII. OVERALL ASSESSMENT

A summary of the overall assessment of the data is provided at the end on the next page.

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU

LABORATORY Quanterra Env. Services

SDG NO. 121536

DATA USER CDM

REVIEW COMPLETION DATE 11/18/96

NO. OF SAMPLES 5 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	METALS	WET CHEMISTRY
1. HOLDING TIMES	<u> </u>	<u>O</u>
2A. INITIAL CALIBRATIONS	<u> </u>	<u>O</u>
2B. CONTINUING CALIBRATIONS	<u> </u>	<u>O</u>
3A. LAB BLANKS	<u> </u>	<u>O</u>
3B. FIELD BLANKS	<u> </u>	<u>ND</u>
3C. RINSATE BLANKS	<u> </u>	<u>O</u>
4. INTERFERENCE CHECK SAMPLE	<u> </u>	<u>NA</u>
5. LCS	<u> </u>	<u>O</u>
6. LAB DUPLICATE	<u> </u>	<u>O</u>
7. SPIKE SAMPLES	<u> </u>	<u>O</u>
8. GFAA QC	<u> </u>	<u>NA</u>
9. ICP SERIAL DILUTION	<u> </u>	<u>NA</u>
10. FIELD DUPLICATES	<u> </u>	<u>ND</u>
11. OVERALL ASSESSMENT	<u> </u>	<u>O</u>

O = No problems or minor problems that do not affect data usability.

X = No more than *about* 5% of the data points are qualified as either estimated or unusable.

NA = Not applicable.

ND = No data available.

DATA VALIDATION FOR: Volatile Organic Compounds using SW-846
Method 8260

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial
Design Groundwater Monitoring Program

SDG NO: 121485

CONTRACT LAB: Quanterra Environmental Services, Santa
Anna, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: November 20, 1996

MATRIX: Water

Data validation was performed following the guidelines in the *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, 3rd Edition* (SW-846) dated January 1990 with current revisions, and the *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, November 1988* with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detects), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Two facts should be noted by all data users. First, the "R" qualifier means that the associated value is unusable. In other words, due to significant quality control (QC) problems, the analysis is invalid and provides no information as to whether the compound is present or not. Results qualified with an "R" should not appear on data tables because they cannot be relied upon, even as a last resort. The second fact to keep in mind is that no compound concentration, even if it has passed all QC tests, is guaranteed to be accurate. Strict QC serves to increase confidence in data but any value potentially contains error.

Thirteen water samples (listed below) were collected at the Baldwin Park site on September 23, 1996 and shipped to Quanterra Environmental Services. These samples were analyzed for volatile organic compounds using SW-846 Method 8260.

BP-GW-MW51801-092396
BP-GW-MW51802-092396
BP-GW-MW51803-092396
BP-GW-MW51501-092396
BP-GW-MW51502-092396
BP-GW-MW51502N-092396 (EQUIPMENT RINSATE BLANK)
BP-GW-MW51503-092396
BP-GW-MW51503K-092396 (DUPLICATE SAMPLE)
BP-GW-MW50501-092396
BP-GW-MW50502-092396
BP-GW-MW50502K-092396 (EQUIPMENT RINSATE BLANK)
BP-GW-MW50503-092396
BP-GW-MW50504-092396

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding time is grossly exceeded).

The samples were analyzed within prescribed holding times.

II. GC/MS INSTRUMENT PERFORMANCE CHECK

The BFB performance results were reviewed and found to be within the specified criteria.

III. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

The response factor measures the instrument's response to specific chemical compounds. The response factor must be ≥ 0.05 in both the initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). If the mean response factor (RRF) of the initial calibration or the continuing calibration is < 0.05 for any analyte, those analytes detected in the associated samples may be qualified as estimated, "J". The results for all analytes that were not detected may be rejected, "R".

Percent relative standard deviation (RSD) is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent difference (%D) compares the response factor of the continuing calibration check to the RRF from the initial calibration. %D is a measure of the instrument's daily performance. %RSD must be $< 30\%$ and %D must be $< 25\%$. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results for samples associated with an %RSD or %D that were above the acceptable limits may be qualified as estimated, "J" and the results for the analytes not detected may be qualified as non-detects with estimated detection limits, "UJ". Non-detects may be used without any qualification if the %RSD is > 30 based on professional judgement. If %RSD and %D grossly exceed QC criteria, non-detect data may be qualified as unusable, "R".

IIIA. INITIAL CALIBRATION

All RFs were ≥ 0.05 and all %RSDs were $< 30\%$ except the following:

DATE	CRITERIA OUTSIDE OF LIMITS	COMPOUND	VALUE OF CRITERIA	SAMPLE(S) AFFECTED
9/20/96	RF RFave	Acetone	0.04672 0.04557 0.04362	All Samples
9/20/96	RF RFave	4-Methyl-2-pentanone	0.03868 0.04791 0.04805 0.03830 0.03700 0.03336	All Samples
9/20/96	RF RFave	2-Chloroethylvinyl ether	0.00098 0.01258 0.04330	All Samples
9/20/96	RF RFave	2-Butanone	0.03408 0.03766	All Samples

Due to the initial calibration verification, the positive results for acetone, 4-methyl-2-pentanone, 2-chloroethylvinyl ether, and 2-butanone were qualified as estimated (J) and the non-detect results for acetone, 4-methyl-2-pentanone, 2-chloroethylvinyl ether, and 2-butanone were qualified as unusable (R) for all samples.

IIIB. CONTINUING CALIBRATION

All listed RFs were ≥ 0.05 and all %Ds were $< 25\%$ except the following:

DATE	CRITERIA OUTSIDE OF LIMITS	COMPOUND	VALUE OF CRITERIA	SAMPLE(S) AFFECTED
10/3/96	%D	2-chloroethylvinyl ether	36.25	BP-GW-MW51501-092396
10/4/96	%D	Acetone	71.73	All Samples except BP-GW-MW51501-092396
10/4/96	RF RFave	4-Methyl-2-pentanone	0.03326 0.02995	All Samples except BP-GW-MW51501-092396
10/4/96	%D	1,2-Dibromo-3- chloropropane	36.29	All Samples except BP-GW-MW51501-092396
10/4/96	%D	2-Chloroethylvinyl ether	79.04	All Samples except BP-GW-MW51501-092396
10/4/96	%D	Chloromethane	31.16	All Samples except BP-GW-MW51501-092396
10/4/96	%D	Bromomethane	33.98	All Samples except BP-GW-MW51501-092396
10/4/96	%D	Trichloroethene	25.45	All Samples except BP-GW-MW51501-092396
10/4/96	%D	Dibromochloromethane	25.86	All Samples except BP-GW-MW51501-092396

The 2-chloroethylvinyl ether result in sample BP-GW-MW51501-092396 was non-detect and, therefore no action was taken due to the CCV on 10/3/96. Due to the 10/4/96

CCV, the positive results for acetone, 4-methyl-2-pentanone, 1,2-dibromo-3-chloropropane, 2-chloroethylvinyl ether, chloromethane, bromomethane, trichloroethene, and dibromochloromethane were qualified as estimated (J) and the non-detect results for acetone were qualified as non-detect with estimated detection limits (UJ) for all samples except BP-GW-MW51501-092396.

IV. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., method, trip, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and equipment rinsate blanks measure cross-contamination of samples during field procedures. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample (10 times for the common contaminants), the sample result may be qualified as non-detect, "U".

IVA. METHOD BLANKS

No analytes were detected in any of the method blanks.

IVB. TRIP BLANKS

A trip blank was not analyzed with this sample group.

IVC. FIELD BLANKS

A field blank was not analyzed with this sample group.

IVD. EQUIPMENT RINSATE BLANKS

The following analytes were detected in the equipment rinsate blank, BP-GW-MW51502N-092396:

MATRIX	COMPOUND	CONCENTRATION ($\mu\text{g/L}$)	ACTION LEVEL ($\mu\text{g/L}$)	SAMPLE(S) AFFECTED
Water	Methylene Chloride	1.3	13	All non-blank samples
Water	Trichloroethene	0.63	3.15	All non-blank samples

Due to the equipment rinsate blank contamination, the methylene chloride and/or trichloroethene results for all the samples less than the above action levels were qualified as non-detects, "U".

V. SURROGATES/SYSTEM MONITORING COMPOUNDS

All samples are spiked with surrogate/system monitoring compounds (SMC) compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured percent recovery (%R) of a surrogate/SMC is outside criteria, the results of that sample may be qualified as estimated, "J" or non-detects with estimated detection limits, "UJ".

All %Rs were within the acceptable control limits.

VI. MATRIX SPIKE/MATRIX SPIKE DUPLICATE

MS/matrix spike duplicate (MSD) data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD results may be used in conjunction with other QC criteria for some additional qualification of data.

All %Rs and RPDs were within the acceptable ranges.

VII. LABORATORY CONTROL SAMPLES

Laboratory control sample (LCS) data are generated to determine the long-term precision and accuracy of the analytical method. The LCS results may be used for some qualification of data.

All %Rs and RPDs were within the acceptable ranges.

VIII. REGIONAL QUALITY ASSURANCE AND QUALITY CONTROL

Samples BP-GW-MW51503K-092396 and BP-GW-MW50502K-092396 were collected as duplicate samples of BP-GW-MW51503-092396 and BP-GW-MW50502-092396, respectively. The RPDs for all results detected in both the sample and its duplicate above the reported limit were below 30% except the following:

DUPLICATE	COMPOUND	CONCENTRATION ($\mu\text{g/L}$)	SAMPLE(S) AFFECTED
BP-GW-MW51503K-092396	1,1-Dichloroethene	45	All Samples
BP-GW-MW51503K-092396	Trichloroethene	31	All Samples
BP-GW-MW51503K-092396	Tetrachloroethene	36	All Samples

Due to the field blank analysis, all positive results for 1,1-dichloroethene, trichloroethene, and tetrachloroethene were qualified as estimated (J) for all samples.

IX. INTERNAL STANDARDS

Internal standard (IS) performance criteria ensure that the GC sensitivity and response are stable during every experimental run. The IS area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the IS must not vary more than ± 30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to -100%) range of the associated standard, all of the positive results for compounds quantitated using that IS may be qualified as estimated, "J", and all non-detects may be qualified as non-detects with estimated detection limits, "UJ". Non-detects may be qualified as unusable, "R", if there is a severe loss of sensitivity (< 25% of associated IS area counts).

All IS data met acceptable criteria.

X. COMPOUND IDENTIFICATION

Target compound list (TCL) compounds are identified on the GC by using the analyte's relative retention time (RRT). For the results to be a positively

identified, the sample peak must be within ± 0.06 RRT units of the standard compound. If the RRT value is not within the acceptable range, the associated results may be qualified as non-detects, "U".

All compounds were identified correctly.

XI. COMPOUND QUANTITATION AND REPORTED CONTRACT-REQUIRED QUANTITATION LIMITS

All criteria were met.

XII. TENTATIVELY IDENTIFIED COMPOUNDS

Not applicable.

XIII. SYSTEM PERFORMANCE AND OVERALL ASSESSMENT

The system performance was acceptable. A summary of the overall assessment of the data is provided on the following page.

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU LABORATORY Ouanterra Environ. Services
SDG NO. 121485 DATA USER CDM

REVIEW COMPLETION DATE 11/19/96

NO. OF SAMPLES 8 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	VOA	BNA	PEST	OTHER
1. HOLDING TIMES	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
2. GC/MS INSTRUMENT PERF.	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
3A. INITIAL CALIBRATIONS	<u> X </u>	<u> </u>	<u> </u>	<u> </u>
3B. CONTINUING CALIBRATIONS	<u> X </u>	<u> </u>	<u> </u>	<u> </u>
4. BLANKS	<u> X </u>	<u> </u>	<u> </u>	<u> </u>
5. SURROGATES	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
6. MS/MSD	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
7. LCS/LCSD	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
8. REGIONAL QC	<u> X </u>	<u> </u>	<u> </u>	<u> </u>
9. INTERNAL STANDARDS	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
10. COMPOUND IDENTIFICATION	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
12. COMPOUND QUANTITATION	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
13. SYSTEM PERFORMANCE	<u> O </u>	<u> </u>	<u> </u>	<u> </u>
14. OVERALL ASSESSMENT	<u> O </u>	<u> </u>	<u> </u>	<u> </u>

O = No problems or minor problems that do not affect data usability.

X = No more than about 5% of the data points are qualified as either estimated or unusable.

NA = Not applicable.

ND = No data available.

DATA VALIDATION FOR: Metals using SW-846 Methods 6010/7000 Series

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial Design Groundwater Monitoring Program

SDG NO: 121485

CONTRACT LAB: Quanterra Environmental Services, Santa Anna, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: November 19, 1996

MATRIX: Water

Data validation was performed following the guidelines in *Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, 3rd Edition* (SW-846) dated January 1990 with current revisions and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, November 1988* with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detect), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Eight water samples (listed below) were collected at the Baldwin Park site on September 23, 1996 and shipped to Quanterra Environmental Services. These samples were analyzed for metals using SW-846 Methods 6010/7000 Series. The metals and associated methods are aluminum, barium, cadmium, chromium, copper, iron, manganese, nickel, zinc, calcium, magnesium, potassium, and sodium by SW-846 Method 6010; arsenic by SW-846 Method 7060; lead by SW-846 Method 7421; and mercury by SW-846 Method 7470.

BP-GW-MW51801-092396
BP-GW-MW51802-092396
BP-GW-MW51803-092396
BP-GW-MW51501-092396
BP-GW-MW51502-092396
BP-GW-MW51502N-092396 (EQUIPMENT RINSATE BLANK)
BP-GW-MW51503-092396
BP-GW-MW51503K-092396 (DUPLICATE SAMPLE)

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding times are grossly exceeded).

The samples were analyzed within prescribed holding times.

II. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

An initial calibration verification (ICV) is required once per 24 hours and a continuing calibration verification (CCV) is required at a frequency of 10 percent (%) or every two hours during an analytical run, whichever is more frequent. The % recovery (R) of all analytes except mercury and cyanide must be between 90-110%. The %R of mercury must be between 80-120% and cyanide between 85-115%. If the %R is outside of the acceptable range, the result of that analyte in the associated sample(s) may be qualified as estimated, "J", non-detect with an estimated detection limit, "UJ", or unusable, "R".

IIA. INITIAL CALIBRATION

An ICV was analyzed once per 24 hours. All %Rs of the elements that the samples were analyzed for were within the acceptable limits.

IIB. CONTINUING CALIBRATION

A CCV was analyzed per the appropriate frequency. All %Rs of the elements that the samples were analyzed for were within the acceptable range.

III. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., preparation, initial calibration, continuing calibration, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Preparation blanks (PBs), initial calibration blanks (ICBs), and continuing calibration blanks (CCBs) measure laboratory contamination. Field and equipment rinsate blanks measure cross-contamination of samples during field operations. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample, the sample result may be qualified as non-detect, "U".

IIIA. PREPARATION, INITIAL CALIBRATION, AND CONTINUING CALIBRATION BLANKS

No analytes were detected in the PB, ICB, or CCB above the reported detection limits.

IIIB. FIELD BLANKS

A field blank was not analyzed for metals.

IIIC. EQUIPMENT RINSATE BLANKS

No analytes were detected in the equipment rinsate blank.

IV. INTERFERENCE CHECK SAMPLE

The interference check sample (ICS) verifies the laboratory's interelement and background correction factors. The %Rs for the inductively coupled plasma (ICP) analysis of the ICS AB solution must lie between 80-120%. If the %Rs are not within acceptable limits and the concentration of either aluminum, calcium, iron, or magnesium in a sample are comparable to or greater than (>) their respective levels in the ICS, the associated results may be qualified.

All %Rs were within 80-120%.

V. LABORATORY CONTROL SAMPLES

The laboratory control sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. All aqueous LCS %Rs must be within 80-120%, except for antimony and silver which have no fixed control limits. If the %Rs do not fall within the acceptable limits, sample results may be qualified.

All %Rs were within the acceptable ranges.

VI. DUPLICATE SAMPLE ANALYSIS

Laboratory duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Laboratory duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. If the RPDs of the laboratory duplicate analyses are not within $\pm 20\%$ (35% for soils) for results ≥ 5 times the contract-required detection limit (5xCRDL) or ± 1 xCRDL (2xCRDL for soils) for results < 5 xCRDL, the associated results may be qualified.

A laboratory duplicate was not analyzed.

VII. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. If the %Rs of the pre-digestion spiked sample (matrix spike [MS]) do not fall between 75-125%, the associated sample results may be qualified and a post-digestion spiked sample (PDS) is required for all analytes. The acceptable control limits for the PDS %Rs are also 75-125%, but the data from the PDS is not used to qualify data.

All %Rs of the MS and MSDs met the criteria.

VIII. GRAPHITE FURNACE ATOMIC ABSORPTION QUALITY CONTROL

The raw data were not provided and, therefore, was not assessed.

IX. ICP SERIAL DILUTION

The serial dilution of samples quantitated by ICP determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is $> 50\times$ the instrument detection limit (IDL), then the 5-fold dilution result must agree within a 10% difference (D). If this control limit is exceeded, the associated results may be qualified.

All %Ds were within the acceptable control limits.

X. FIELD DUPLICATES

Field duplicate samples may be collected and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance. If the RPDs of the field duplicate analyses are not within $\pm 30\%$ (50% for soils) for results $\geq 5\times\text{CRDL}$ or $\pm 1\times\text{CRDL}$ ($2\times\text{CRDL}$ for soils) for results $< 5\times\text{CRDL}$, the associated results may be qualified.

The RPDs for the field duplicate and the original sample were all below 30%.

XI. OVERALL ASSESSMENT

A summary of the overall assessment of the data is provided on the next page.

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU LABORATORY Ouanterra Env. Services

SDG NO. 121485 DATA USER CDM

REVIEW COMPLETION DATE 11/20/96

NO. OF SAMPLES 8 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	METALS	WET CHEMISTRY
1. HOLDING TIMES	<u> O </u>	<u> </u>
2A. INITIAL CALIBRATIONS	<u> O </u>	<u> </u>
2B. CONTINUING CALIBRATIONS	<u> O </u>	<u> </u>
3A. LAB BLANKS	<u> O </u>	<u> </u>
3B. FIELD BLANKS	<u> ND </u>	<u> </u>
3C. RINSATE BLANKS	<u> O </u>	<u> </u>
4. INTERFERENCE CHECK SAMPLE	<u> O </u>	<u> </u>
5. LCS	<u> O </u>	<u> </u>
6. LAB DUPLICATE	<u> ND </u>	<u> </u>
7. SPIKE SAMPLES	<u> O </u>	<u> </u>
8. GFAA QC	<u> ND </u>	<u> </u>
9. ICP SERIAL DILUTION	<u> O </u>	<u> </u>
10. FIELD DUPLICATES	<u> O </u>	<u> </u>
11. OVERALL ASSESSMENT	<u> O </u>	<u> </u>

O = No problems or minor problems that do not affect data usability.

X = No more than *about* 5% of the data points are qualified as either estimated or unusable.

ND = No data available.

DATA VALIDATION FOR: Wet Chemistry using EPA Methods 100/300 Series

PROJECT CONTACT: Suzanne Rowe

SITE: Baldwin Park Operable Unit Pre-Remedial Design Groundwater Monitoring Program

SDG NO: 121485

CONTRACT LAB: Quanterra Environmental Services, Santa Ana, California

REVIEWER: Krista Lippoldt, CDM Federal

DATE REVIEW COMPLETED: November 20, 1996

MATRIX: Water

Data validation was performed following the guidelines in *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, March 1983 with current revisions and *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, November 1988 with current revisions. All data are valid and acceptable except those analytes which have been qualified with a "J" (estimated), "U" (non-detect), "UJ" (non-detect with an estimated detection limit), or "R" (unusable). The data assessment is discussed in detail on the attached sheets.

Thirteen water samples (listed below) were collected at the Baldwin Park site on September 23, 1996 and shipped to Quanterra Environmental Services. These samples were analyzed for wet chemistry parameters using EPA Methods 100/300 Series. The wet chemistry parameters and methods include alkalinity by EPA Method 310.1; total dissolved solids (TDS) by EPA Method 160.1; total suspended solids (TSS) by EPA Method 160.2; hardness by EPA Method 130.2; and chloride, sulfate, nitrate, and nitrite by Method 300.0.

BP-GW-MW51801-092396
BP-GW-MW51802-092396
BP-GW-MW51803-092396
BP-GW-MW51501-092396
BP-GW-MW51502-092396
BP-GW-MW51502N-092396 (EQUIPMENT RINSATE BLANK)
BP-GW-MW51503-092396
BP-GW-MW51503K-092396 (DUPLICATE SAMPLE)
BP-GW-MW50501-092396
BP-GW-MW50502-092396
BP-GW-MW50502K-092396 (EQUIPMENT RINSATE BLANK)
BP-GW-MW50503-092396
BP-GW-MW50504-092396

DATA ASSESSMENT

I. HOLDING TIME

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may be biased low, therefore, the positive results of a sample whose holding time has been exceeded may be qualified as estimated, "J". The results of the analytes not detected in the sample may be qualified as estimated, "J", or unusable, "R" (if the holding times are grossly exceeded).

The samples were analyzed within prescribed holding times.

II. CALIBRATION

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration verifies that the instrument is giving satisfactory daily performance.

For EPA Method 300.0, the instrument must be calibrated daily using a minimum of a blank and three standards. An initial calibration verification (ICV) is required immediately after daily calibration and a continuing calibration verification (CCV) is required at a frequency of 10 percent (%) and at the end of the an analytical run, whichever is more frequent. The ICV response or retention time of each analyte must agree with the expected value by ± 10 percent. The % R of the CCV must be within 90 to 100 percent. If the response is outside of the acceptable range, the result of that analyte in the associated sample(s) may be qualified as estimated, "J", non-detect with an estimated detection limit, "UJ", or unusable, "R".

IIA. INITIAL CALIBRATION

An initial calibration was performed with a blank and three standards. All ICV responses met the acceptable criteria.

IIB. CONTINUING CALIBRATION

CCVs were analyzed at the appropriate frequency and in the correct analytical sequence. All CCV %Rs met the acceptable criteria.

III. BLANK CONTAMINATION

Quality assurance (QA)/QC blank samples, i.e., method, field, or equipment rinsate blanks, are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and equipment rinsate blanks measure cross-contamination of samples during field procedures. If the concentration of an analyte detected in a sample is less than 5 times the concentration detected in a blank sample, the sample result may be qualified as non-detect, "U".

IIIA. METHOD AND CALIBRATION BLANKS

A method blank was analyzed for all parameters. There were no analytes detected in any of the method blanks.

IIIB. FIELD BLANKS

A field blank was not analyzed for wet chemistry parameters.

IIIC. EQUIPMENT RINSATE BLANKS

No analytes were detected in the equipment rinsate blank.

IV. LABORATORY CONTROL SAMPLES

The laboratory control sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. For EPA Method 300, all aqueous LCS %Rs must be within 90-110% and all RPDs must be less than 20%. For all other wet chemistry methods, the %Rs must be within 80-120% and all RPDs must be less than 20%. If the %Rs or RPDs do not fall within the acceptable limits, sample results may be qualified.

An LCS and LCSD were analyzed for TDS, TSS, alkalinity, and hardness and an LCS was analyzed for nitrate, nitrite, chloride, and sulfate. All %Rs and RPDs were within the acceptable limits.

V. DUPLICATE SAMPLE ANALYSIS

Laboratory duplicate sample determinations are used to demonstrate acceptable method precision by the laboratory at the time of analysis. Laboratory duplicate analyses are also performed to generate data in order to determine the long-term precision of the analytical method on various matrices. If the RPDs of the laboratory duplicate analyses are not within $\pm 20\%$ (35% for soils) for results ≥ 5 times the contract-required detection limit (5xCRDL) or ± 1 xCRDL (2xCRDL for soils) for results < 5 xCRDL, the associated results may be qualified.

A laboratory duplicate was analyzed for TDS, TSS, alkalinity, and hardness. All RPDs met acceptable criteria.

VI. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. If the %Rs of the spiked sample (matrix spike [MS]) do not fall between 80-120% or the RPDs of the duplicate results do not fall between $\pm 20\%$, the associated sample results may be qualified.

An MS and MSD were analyzed for chloride, sulfate, nitrate, and nitrite. All %Rs and RPDs were within the acceptable control limits.

VII. FIELD DUPLICATES

Field duplicate samples may be collected and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision; therefore, the results may have more variability than laboratory duplicates which measure only laboratory performance. If the RPDs of the field duplicate analyses

are not within $\pm 30\%$ (50% for soils) for results $\geq 5\times\text{CRDL}$ or $\pm 1\times\text{CRDL}$ ($2\times\text{CRDL}$ for soils) for results $< 5\times\text{CRDL}$, the associated results may be qualified.

The RPDs for the field duplicate and original sample were within acceptable control limits

VIII. OVERALL ASSESSMENT

A summary of the overall assessment of the data is provided at the end on the next page.

INORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE Baldwin Park OU

LABORATORY Quanterra Env. Services

SDG NO. 121485

DATA USER CDM

REVIEW COMPLETION DATE 11/20/96

NO. OF SAMPLES 13 WATER SOIL OTHER N/A

REVIEWER [] ESD [] ESAT [] OTHER, CONTRACT/CONTRACTOR

	METALS	WET CHEMISTRY
1. HOLDING TIMES	<u> </u>	<u>O</u>
2A. INITIAL CALIBRATIONS	<u> </u>	<u>O</u>
2B. CONTINUING CALIBRATIONS	<u> </u>	<u>O</u>
3A. LAB BLANKS	<u> </u>	<u>O</u>
3B. FIELD BLANKS	<u> </u>	<u>ND</u>
3C. RINSATE BLANKS	<u> </u>	<u>O</u>
4. INTERFERENCE CHECK SAMPLE	<u> </u>	<u>NA</u>
5. LCS	<u> </u>	<u>O</u>
6. LAB DUPLICATE	<u> </u>	<u>O</u>
7. SPIKE SAMPLES	<u> </u>	<u>O</u>
8. GFAA QC	<u> </u>	<u>NA</u>
9. ICP SERIAL DILUTION	<u> </u>	<u>NA</u>
10. FIELD DUPLICATES	<u> </u>	<u>O</u>
11. OVERALL ASSESSMENT	<u> </u>	<u>O</u>

O = No problems or minor problems that do not affect data usability.

X = No more than *about* 5% of the data points are qualified as either estimated or unusable.

NA = Not applicable.

ND = No data available.

E

Appendix

III

Appendix E
Aquifer Test Data

UNSCANNABLE MEDIA

See Document # 29693
for scanned image(s) of the media document(s) label(s).

To use the unscannable media document(s),
contact the Superfund Records Center.